Foreign institutions inquiries: #6594

Inbox

Foreign Institutions <foreigninstitutions@saqa.co.za> Fri, Jul 8, 2:53 PM (2 days ago)

to
me

Thank you.

SAQA has received your enquiry and will respond to it within two working days, unless further research and/or consultation is required.

Your Reference number is: **#006594**

Kind regards,

SAQA

Name: tshingombe
Country :south Africa
Purpose: check status before applying
Email: tshingombe k@ gmail.cok
Institutionbsawainsty St Peace Afric
Application
Submission number/ name/ date /status
20220785055/Tshitaditshingombe/202207_08 stared
Over view qualifications history purpose resulted in line access new application name of qualifications award by instituts
The qualifications was completed award by country from general employment future study high education university undergraduate.daved application estimated submission no 202207125014 qualifications holders tshitaditshingombe
Date submitted 2022-07-12;10:07;22 current status estimated completion..
Foreign instituts inquired policy criteria outcome assessment award meeting section 29(a),march2027.saqa application 201911130002 for TshitadiFiston does not meet our requirements and is being returned explanatory letter refunded saqa..
Dear 29(a) of the and criteria for evaluation foreign qualifications withing the south African NQF as amended march2017) stipulation the requirements that a foreign awarding institutions must meet for its qualifications to be recognisedsaqa. Base the advice below on information current to it saqa reserves the right to change this advice should new authoritative information come to its attention.our online application documents stipulated the following in terms of schooling qualifications.saqa accept only schools leaving qualifications issued by the official examine certification body in the country of original and not by the school where based where base on external examination.
No certificate of evaluation will be issued for school leaving than those in respect of completed national school existing qualifications issue by the relevant authorities.
Therefore.only school leaving qualifications correctly awarded.by the authorised national examination booklet in the democratic republic of Congo will be recognised and not school leaving documents issue by the schools it self .note the purpose of this overseas instituts email is to give people some direction regarding accreditation band non accredited foreign instituts for the purpose of recognised acceptance by Sawa for foreigners.qualification .
Kind regards authentication service
Saqa the national qualifications framework (NQF) act 67of 2008mandates saqa to provide . Qualifications evaluation and advisory services which it does in accordance with the policy and criteria for evaluation foreign qualifications with the south African NQF as amended March 2017secyion29(a)of the policy and criteria stipulation the requirements that a foreign an awarding stipulate the requirements that a foreign.an award stipulated the requirements that a foreign an awarding institutions must meet for its qualifications to recognise.

utomatic reply: 202207085055

Inbox

foreignapplicationsvia eur02-he1-obe.outbound.protection.outlook.com

Fri, Aug 12, 8:47 PM (2 days ago)

to
me

Dear SAQA Applicant

We have received your application for the evaluation of your foreign qualification(s) and will revert to you as soon as possible with either your reference number or further correspondence.

Please take note of the following:

SAQA is going through a transitional period, which has resulted in some delays in the processing of Foreign Evaluations applications as well as responses to telephone, email and social media enquiries. We are doing our best to expedite applications and to respond to enquiries. To make it easier for you to use our services, we have placed all the information you need on our website.

Do not resend your application unless SAQA requests you to do so - neither by e-mail, nor by courier. Duplicate applications unnecessarily delay the process.

When requested to submit additional documents, please log into your SAQA online profile and upload all the outstanding documents together with the documents that were previously submitted (Complete application pack) DO NOT SEND THESE VIA E-MAIL

This e-mailbox is only for receiving e-mail applications, do not use it for anything else; otherwise, it will be ignored.

All enquiries are to be referred to the Foreign Qualifications Contact Centre using the contact details, +2712 431 5000 or dfqeas@saqa.co.za.

For additional information, you can access the SAQA website at https://www.saqa.org.za/

Kind regards

Directorate: Foreign Qualifications Evaluation and Advisory Services (DFQEAS)

202207085055

Inbox

foreignapplications<foreignapplications@saqa.co.za>

Fri, Aug 12, 3:07 PM (2 days ago)

to
me

Good day,

Kindly resubmit all the documents that you have uploaded on your online portal via email including the outstanding

Application form / invoice generatedfrom the online application system

Proof of payment of the amount reflected application form / invoice

A consent form signed by the above-mentioned qualification holder.

Valid proof of identification of the above-mentioned qualification holder

Final award certificate(s)

Academic transcript(s)–

Thank you

Regards,

Saqa statement certificate work :

Statement of work experience .program code. Electrical engineering saqa..qualifications I'd :90643 national n diplomat.engineeringstudie electrical n diplomat engineering.
NQF level 6,360. Learner details.
Company name ..St peace college
..interpre dream look for evidence job requirements.check.folow.
2.mesire for checking wiring and circuit
Installation and circuit up1000v AC preparing work on accordance legislation required operational procedures and hazard and safety requirements.opetating procedure work using instrument measure.checkmaterial.for conform process.selection,
Cable installation cable .wire system and enclosed support system.marking labelled testing wiring.completing report and documents shortly comment and terminology..
Engineering diploma electrical sub electronics record and verified relevant circuit assembly electronics schematic.
Tagg.testing checking modified
Entering routine informatonvproforma.mainyen repaired control system .diplomat.look for evidence confirm skill.check operational control device signal obtained.interpre.releventplaningpersonal.cpnform control operation response..
Engineering dismantling .disassembling.servicrable item . setting up appropriate test and calibration equipment settings..
Test skill knowledge dream statutory electrical wiring support and protection.requirementterminal.televany .manufacture.conductorconnection.conection report .select transmission final control.indtsll.loval installation.

Side cutter
Sed for cutting or tmming of connecting wire terminal lead in circuit components or terminal lead in the circuit board long nose plus.sed.
Holding bending and stretching the lead electronic.solderingpencil.use to joint two or more metal conductor with the support soldering.sed join two more metal conductor with the support.
Very satisfactory performance
Satisfactory performance
Fairly performance..
Technical electrical officer
Band minimum
Could you created the latest crime figthi g technology.
Skill computer problem.corr function
Management all electrical aspects of construction project include documents in inspection .compilation specifications saps use
.
Working line support and fault analysis in laboratory or I'm field a long side operational colleagues and officer.
Practices technology.
General electronic.ambedded system including hardware and software
Knowledge of audio communication and RF.
Schematic capture PCB.scjematiic.manufacyure technical.

Qualifications.hnc/hand electronic electrical engineering systems development..

Examiner for plant engineering department health labour engineering qualify exam
Course t1. Electrical engineering.math.engineringbmechanic.electrotechnology mechanical applied thermodynamics steering.industrial. Electronics..

N3 engineering drawing technical
college.engineringscience.industrialelectronics.mathematics.electrotechnic.strengh of material.conyrolsystem.mechanics.power machine s.industrial electrical...
2.structure of materials
Simple stress and strain.thing wallet pressure vessel.torsion of circular shafts.close coiled helical spring.sher force and bending moment.temperature.
Mechanical.strain energy due to direct direct.second moment of area bending stress inbesms.strutsbuckling.catenairie.roundation.fatigue.mechanical.testing of shaft top.properties different type reinforced concrete retaining walls fasterimg.
THEORY of machiners
Conveyor.windingplant elevator exclavatr.tractor.motionandinertia.
Department health labour ..education
Sylabus for plant engineering
Normal duty accent .control and supervision of the safe installation competency bin the execution control and supervision btheinstallation.maintenance and operational of machinery
1..And safety and management accident prevention risk control financial management.)). faultffind protection fault supply open circuit open coil.breaking deceleration fault calculation breaker ..hand tools safety trade theory electrical .
Qns electrical technology
AC machine.dcgenerator.dcmotor.efficience.ac voltage and current single and three phase circuits single and tree phase.transformation.alternatingwindings.production of rotating magnetic fields.charateristicsynchronisationgenerous.generator.three induction motor.semie conductor device.electric lamp and illumination.electric power transmission distribution.short circuits conditions circuits breakers.undergroundvcabke insulator overhead line ..

Questions completedelecyrical mechanical
Displacement velocity and acceleration.
Static and dynamic balance
Belt and chain drives .brakes and chain drive dynamometer.
Toothed...
3.economy power supply maximum demand
Power factor correction
Electrical
High frequency transient
Methods earth protection.storageenergy.rectification.gauly discrimination.illumination.communication.explodion.protection.light.basic data transmission.
Electrical air and compressor.blower rotary compressors.
Air motor.compressorreceive.refrigeratiom and property refrigerator air conditioning psycho metric.stam heater confessed.steam and gas turbines fan.inyerbal combination engineering heat transfers.furl and combination..
Gear train lubrication.cluchrs.knowlege of machine tools cranes.liftingequipment.bearning.
Mechanical.hydostatic transmission flow through pump friction losses.caracteristiccurves.losses measure transmission Pelton shell flow in load.hydraumecanic circuits
5.mechanic measure airflow and dusting.
Properties..
Water purification
East disposal.
Palliation.noise.illumination.

Practices knowledge factory
Planning and commission of project operational aplannermaintenance.schem.fire prevention ad fire control loss control management.firedetection.systrm accident investigation.
Testing and repair of electrical motor phasing and synchronisation.ac motor operational in tandem fault discrimination.electric system emergency electric plant explosion proof

Hydrostatic drive classification and characteristics hydraulic circuit for sequence operational general property lubricant and additives to lubricant
Dust suppression.emisdion control of diesel engines flame proof diesel.
Boiler inspection and repaired and repaired vessel under pressure maintenance and fault diagnosis of compressor refrigerator and air conditioning ventilation system steam.
Regulatory promulgated in term section.
General admission regulation notice.
Electrical installation.general safety regulations.the environment regulatority for workplace
The electrical machinery regulation notice.the electrical machinery regulation.facilityregulation..the lead regulatory..the lift escalator..passages..conveyor.major regulated old machinery.occupational health and safety act.presente being system.revision.

ARTISAN RECOGNITION OF PRIOR LEARNING (ARPL)
TRADE TEST APPLICATION FORM
***REQUIREMENTS TO QUALIFYFOR ARPL TRADE TEST**

QUALIFYING CRITERIA CATEGORIES:

A. Minimum three (3) years relevant work experience within South Africa and **N2certificate** including **Relevant Trad Theory** or
B. Minimum three (3) years relevant work experience within South Africa and **Relevant Engineering NQF Level 3Certificate** or
C. Minimum three (3) years relevant work experience within South Africa and **Technical Grade 12 with Maths, Engineering Science and Related Theory Subject** or
D. Minimum Eighteen (18) months relevant work experience within South Africa with **Relevant Engineering NCV L 4Certificate** or
E. Minimum Eighteen (18) months relevant work experience within South Africa and **Relevant and Directly Related the Trade Theory Subjects)** N6 certificate or National Technical Diploma (S or N Stream) or
F. Minimum four (4) years' work experience within South Africa with Grade 9 (Standard 7) or
G. Minimum three (3) years relevant work experience within South Africa and successful completion of an **ARPL Tooli Assessment for the trades that already have toolkits in place** - Diesel Mechanic; Motor Mechanic; Boilermaker; Welde Fitter; Fitter & Turner; Electrician; Heavy Equipment Mechanic; Instrument Mechanic; Lift Mechanic; Shipbuilder; Panel Beater; Vehicle Painter, Bricklayer; Plumber; Carpenter and Sheet fed-Lithographer
H. Successful completion of the merSETA registered **NQF Level 2, 3 and 4Trade Related Learnerships** with minimum (2) years, inclusive of the institutional and workplace components.
DOCUMENTS REQUIRED WITH THIS APPLICATION (CERTIFIED BY THE COMMISSIONER OF OATH): **NB! Certified documents must not be older than three (3) months.**
1. Clear originally certified copyof **Identity Document**
2. Clear originally certified copy of **Educational Qualification**
3. Clear original or originally **certified service letter** on a company letter head (**with company registration number**) proof of experience **within South Africa** with detailed daily duties, start date and signed off by the duly authorised person.
4. Where applicable, documentary proof showing that the applicant is legally in South Africa with exclusion of medical permit.
5. A candidate, who attempted a trade test and **passed at least 50%** of the number of tasks given, will be given recogni for **those tasks. The recognition will be retained by the candidate for a maximum of3 attempts or 18 months** fron date of successful completion of the trade task whichever comes first. Thereafter, no credit or recognition of tasks applies.
6. The merSETA will communicate the outcome of the application directly with the applicant and **not to third party.**
7. An arrangement may be made for the merSETA to pay for the trade test fee for unemployed candidates.
8. A pre-assessment may be recommended whereby the cost will be borne by the employer or candidate.
9. Relevant work experience means according to training schedules for the trade.
Tool Jig, Die-Maker and Plastic Mould Makers, the applicant needs to do pre-work before attempting the actual tra test. Documentation in this regard must be requested from the applicable Regional Office of the merSETA prior the trade test date for completion.
The merSETA may decline the application if there is a conflict of interest with regard to the selected Trade Test Centre.
***The above criteria is adopted from the Trade Test Regulations Vol. 599 No. 38758 of 8 May 2015 Gazette No. 10425.**

APPLICATION FOR A TRADE TEST
(This form should be completed in block letters)
In terms of Section 26 D of the Skills Development Act

Surname:

tshingombetshitadi

First Names:

tshitadifiston

Race and Gender

African	Female		Male	yes
Indian	Female		Male	
Coloured	Female		Male	
White	Female		Male	

Preferred Trade Test Centre (not apl. To INDLELA):

jhbgauteng

Nationality

:congolesase

Province

: kasai

Municipalit

y: kasangidi

Identity/passport number: TIRCOG000910610

Date of

Birth:10/111982

Educational Qualification:

engineering electrical

Foundational Learning Competence (FLC): panel

wiring electrical

Residential

Address:103 rock view yeohvill/ jhbgauteng

Postal Address:

103

Telephone (Home): Telephone (Employer): 0113330171

Cell Phone number: 0787675373

E-mail address:tshingombe520@gmail.com/tshingombekb@gmail.com

Name and address of current employer: stpeace college

Current Occupation:enginering

OFO Code: 0787675373

Trade test applying for (trade title): engineering electrical tra

Specialisation: trade theory

Have you attempted a trade test previously? If yes, supply date and Centre name

Yes	ye s	No	

Centre Name:st peace college

Date:

1

Trade test attempt no:

Details of Experience:panel wiring trade theory award

Attach appendix of outlining the scope of workplace exposure: Evidence in the form of testimonials, certificates of the Skills development provider detailing technical training completed certificates of service by employers or other persons of standing substantiating the training and experience referred to above must accompany the application.

Name and address of workplace	From	To	Detail of practical tasks

(a)st peace college	**2020**	**2021**	**Panel wiring**
(b)			
(c)			
(d)			
(e)			

Details of training - (Knowledge and Skills training). *Attach certified copies*
Original documentation must be provided with the application and the candidate must provide the centre with copies certified by a Commissioner of Oaths.

Name of Skills development provider	From	To	Course
(a)industrial installation ac dc machine / wire ways Engineering n	**2021**	**2020**	**Electrotechnics Trade theory electrical**
(b)			**electrotechnology**
(c)			**Industrial electronic**
(d)			**instrumen**

Note: Training and experience: (Give full details and exact dates)

Yes ye s No ☐ Are you currently bound by a learner agreement?

Learner Agreement No.:

Relevant SETA:

Applicant’s Signature:

tshi Date: 10/11/2020

For Official Use

Recommended for the Trade Test YES NO

Trade test Serial Number:

Trade test date:

Trade test Centre:

Accreditation number:

Receipt no:

Comments:

……

……

Delegated Person

Name: ……

Signature: ……

Additional Information (Compulsory)

The purpose of this document is to make the artisan trade test assessor aware of any medical condition in order to ensure the safety of the trade test candidate and the people around him / her.

MEDICAL INFORMATION

Please indicate by means of a cross in the appropriate space, as to whether or not you suffer from any medical disorder or allergy, e.g. high / low blood pressure, epilepsy, etc.

YES	**NO**	**If YES, please state the nature:**

YES	**NO**

Pease indicate if you have any disability

If YES, please state the nature:

June examination 2022 grade .time 2h hour page..master skills assessment questionnaire.detail.mark.time minute. Skill master matric question...
Trade theory electrical master skill phase trade note teach intermediary.basic..elementairseignor Portofilio.investigation analysis knowledge assessment module skill question value circular compare scaling weight mastering answering questions formal Summative value matric statement.question dreaming explain labell knowledge matric .. orientation industrial planing knowledge synthesis questions answered research fundamental formulation answers..trade theory electrical ..electrical technology logic AC DC current machine low ohm . impedance..resonance. researchreasoning..masteringrwiten CORRECT mastering circulars..

2.Education technology technical engineering trade theory. Educare engineering phase elementaire fundamental knowledge criterion. Intermediate seignor system control process teach lecture tutorial councils research knowledge design didactic model psychology test model development model sheet principle vocational AC DC current low evaluation.oscillator resonance watch guidelines pedagogy model method presentation lecon plan classroom management director class care . knowledge directorate trade theory educare development care maintenance inspection compliance sabs low compliance know legs magnetic.. industrial electronic .module activity lecon ac .DC.curent machine motor transformation measures transmission module knowledge module fundamental assessment.frameworkbregulatory info system knowledge recruitment policy lecture patrol lecon plan .director planing school phasing modules subject faculte.

ID : EVALUATION SAQA APPLICATION 20191130002

_____, **202001305040/ 201911130002**

ID: N1-N2,N3/N4/N5/N6 , N 2010002023812 / 2004007064381 /2011007434332 NATIONAL EXAMINATION

HIGHER. EDUCATION QUALIFICATION

-FINAL AWARD (DEGREE / DIPLOMAT CERTIFICATE) SUBMITED 1STH/

- NO PROVISIONAL CERTIFICATE OR UNOFFICIAL STEMENTS

-CERTIFIE NO SUBMITE 1TH

-OFFICIAL STATEMENT FROM INSTITUT

- DIPLOMAT D'ETAT EXAM CERTIFIE / NO SUBMITED

-ID: N1-N2, N3/N4/N5/N6, N 2010002023812 / 2004007064381 /2011007434332 NATIONAL EXAMINATION

- REGISTRAR CERTIFICATE NO: COM 18269001: /

- ST PEACE COLLEGE LEVEL N ENGINEERING CERTIFICATE LEVEL 1,2,3,4, REGISTRAR CERTIFICATE NO: COM 18269001:

-FINAL DEGREE/ DIPLOMAT DEGRE SAQA N6 NQF 6/ NQF7 / NQF8 CONTINUE

- SAQA UNIVERSITY DEGREE 1, 2, 3, 4 NQF7/ NQF8 , SUPLEMENTARY PREPARATORY SELECTOR DIPLOMAT

-REGISTRAR FEES: FINAL EXAM DIPLOMAT N / SAQA 50%

-REGISTRAR FEES FINAL

st peace college filing

NAME/ LEARNER : TSHINGOMBE -TSHITADI

MODERATOR: MR BENJAMIN

ASSESSOR POL/ ENGI: MR JACSON

DIRECTOR: MANAGER /PRICIPAL: CONIE

ST PEACE COLLEGE / AND A I P

FACULTY : ELECTRICAL ENGINEERING

St peace college assessment
Engineering faculty.
Filing admission examination
Regular irregularity
Submission completed :
Filing number :
Affidavit number record investigator :
Statement. I'd number invigilator:
Submission number date time :
Level . National n.diplomat
Level national n5..certificate
Level national n 6.

1.Time table examination internal . .1.2.National trade examination
National engineering
Tech matric ncvs exam

2.Calender national technical vocational St peace college.

3.trade theory national examination time table :

4.Circulum policy matric n3.grade 12 final examination diplomat sylabus
Subject.
Weighting scale .
DBE time table subject DBE sylabus matric teacher note books circulum

Subject .NCs trade matric
Subject: n3.n6 caps
N3 trade theory electrical .industrial /grade12 trade theory
Master skill teach note book matric
Assessment .topic activity presentation oral formal Summative assessment
Exam saqa criteria school leavers

N3 /grade 12..orientation industrial)
N3/grade 12. supervisor industrial

N3/grade12.planing organization
N3/grade 12.mathematics
N3/grade12.engineering science
N3/grade12.economic businesses tourism
N3/ grade12.nursing health
N3/grade12..civilcarpentry build science
N3/grade12..mechanical .theory .diesel
N3/grade12..business English /basis English
N3/grade 12..educare . African
N3/grade 12..physic .
Na/grade12. Teach phase police traffic safety. security
Exam questions metric open book
Master skill engineering matric skill
Note teacher skill topic learner
Time table rwiten
Rwitensylabuss completed circular extra grade 12..completed n3integrity
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5.time table national trade certificate diplomat technical .exam labourlicence qualifications Level .
N1.n.2.n3.n.4.n.5.n.6 examination sylabus theory practically national trade examination
Subject trade theory examin certificate
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Work labour skill trading book hand vocational guidelines circular
5.1.n1.n.2.n.3..4.n.6. Carpenterry examination subject wood work engineering science Plante operation subject trade theory practice sylabus
Master skill labourcarpenterry practical
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5.2nursing subject . Health promotion procedure health. Pathology labour skill sylabus operational exam engineering clinic

5.3 brickline building science .level exam textbook manufacture relate
5.4.panel wiring electrical level trade they electrical .mathematics . Textbook merseta textbook. Manufacture relate council engineering science engineering
5.5.plumbing firing diesel mechanic
5.6.policing traffic theory national examination theory .
Master skill development trade theory electrotechmaster..trade hand book examin national trade n trade nated 5.7orientation industrial.supervisionplaningindustrial.organisation .
5.8.Development system it

Master. Master doctoral saqa NQF level 6.7.poste doctoral labour relations bargaining engineering..

7..n1.n2.n.3.n.4.n.5.n.6 . Engineering trade national diplomat certificate engineering time table short time full time table high education engineering
7.1.Electrical engineering time table .
7.2.Mechanical engineering time table.
7.3.Civil engineering time table .
Engineering trading examination.and
Sylabus close book examin national engineering diplomat ..
Time table trade theory electrical engineering fundamental n basic system system trade design process trade control trade fabric trade engineering .. fundamental operational requirements trade sylabus explained.

NQF engineering councils engineering trade council .councils education
Textbook engineering art creativity analysis investigation skill
Engineering licensed fundamental.ystem process fabric. Completed exercise textbook. Resolve solve assessment engineering..
examination outcom entry exhibition time table
Level.n1.fundamental basic power engineering study . qualifications NQF.1.2.3.4.5.6.7. invigilator investigator
Textbook questions explanation
Career system advanced machine...control process..projet fabrics
Certificate.
Institutor engineering framework regulatority engineering..

Irregularities center poor rwong policy rwong framework regulatority...

8.educator technology technical .phase assessment inspection tutorial lecture ..
Ergonomics psycholmetric .intermediary elementary seignor teach fundamental
Maintenance care .health development engineer abet caps .. irregularities

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Subject educare and engineering
Business low career and engineering workshop place..
Professional.professor tutorial counseling vocational.principle .NQF
Educare n4.n4engin labour n4.
Subject ..lecture
Research TVET lecture doc n7...

Poe verification coverage
Designing model didactic
1.subject /assessment task//mark allocation///content average////student programmer////
2.electrical trade theory . electrotechelectrotechnolgy, mathematics , engineering science physics engineering, engineering science.drwaing /assignment//310,302,1000,module safety .
studentprogrammer.week study completed
!!!!Engineering processing design low requirements allocation synthesit verification task . sequencegov item 3month 6minth progress
Subject/term 1//term2//total
1.Evidence low organisation supervisor planning
1 .2. Low: supervisor and management product labour low educareeducationelintellectuel care low didadic
Low: engineering final process business engineering career natural low psychometric phenomenon.
Deputy TVET marketing motion policy low framework regulatority mandate irregularity engineering trade reports 190.
Low system development code line Colum matric vertical value..
Low assessment portfolio documents wallet flic floc timer compare electronics mail disclaims posted Relais communication ordering address policy security.message posted officer system cloud protection documents missing documents assessment address postal.
Low policy engineering information management system vsiplylowgov skill administration low implementation system LRA relation labour
Low union police bargaining Ccma low binary information electrocompt onus balance low.
Low test humain resource bpolice induction learner motor industry skill
Low safety police security Union btrade theory electrical gov machinery labour health license commission compliance installation EIC low safety Anand commission motion low safety amand EIC sabs gov framework TVET low compliance training.
Low engineering from electrical rescission power and information intelligence non compliance restrain trade database.material hardware systems in components electrical delay.egineering system process development

Low recreation designing low communication system cloud policy information management system licensed jurisdiction term regulatority 10142-1size minimum 10^{o}000max Portofilio docket system build database relay gate door home control room .space network geotech limited not traffic design try low access control .
Low synchronisation asynchronous information library algebraic system motion rescission safety policy electrotechelectrotechnolgy fundamental power achieve value Poe refund system development cloud police record of legal rescission it rescission engineering recreation trade unions policy procedure labou missing fault dismissed scam spam criminal schedule officer.commission EIC cebec bible ..

Police resolve crime admni information final
Administration learner registration attandanceinvigy learner filing attandancefacitator.learner reward information pay attention.

Low Poe evidence police operational principal low command and control and of land army assessment police operational detention.operation enforcement compliance assessment offence defense patrol methods investigation criminal interview and low enforcement.vrrification enforcement traffic control potential cause determine land record.evidence collection item recommend framework verification subject industrial electronics module electrotech engineering science module allocation mathematics n1.n6..
1.system engineering process management low system process overview required analyse allocation design synthesis verification.wprk break down structure configured
Integration cost and function allocation primary task define sequence functional gov item planning work cost prior.work breakdown electronics system hardware softward data measure test measure support system header switching defense business systems quality long.life..
Verification system engineering fundamental low to explat power distribution system electrical noise communication system bonding shield group safety lightning discharge fault protection communication marking priority output physical architecture product elements decision databases input function archicad enable ipts decision databases.autimate control constrain.
Verification.low evidence thermo electrical coding operational manufacture performance vs current max value DC vs pump power supply of the manufacture comparison of two tech control linear vssm coding system heating pump vs current controller compare ovaralll energy design process thermo electrical estimate

interactive byeat parameter power heater rejected vs current load power dissipated dq/St heat rejected vs current allocation function constrain synthetic system elements alternative assessment technology ..
//)Poe evidence low mathematics rules low term monomial binomial trinomial polynomial factorisation.loq sign sum low differential.product quotient low addition subtraction.multiplication.division.low of exponential power low trigonometric angle triangle algebraic identify.low limited low continuity function reasoning low derivative function existing relation.low identify trigonometric.exist.low of integration...
///Poe evidence low physical engineering low system international low symbol name unit name of law relate meter kilograms litre Newtown kilograms lows Pascal amperage ohmwatjoulCelciuskelvin.voltage meter per second.secondkilometres voltage per square metre.henry.faad.herz .
Evidence low static kinematics.dynamics.motiobreasoning.low force required to accelerate f#m.a reasoning angular velocity
Low equilibrium anticlockwise.moments equals to clockwise
Low moment of cylinder volume
Low strength material magnitude area low.hydraulic pump p=f/a. P=p.g.h. ?... Low.. PV=m.r.t
Low hook expensive young module reduction low gravity force object Newton..
Poe evidence low trade theory ..electrotech commission international EIC sabs sans isocebec skill development engineer outcome AC .DC power AC.dc.machineSerie exciting independent shunt compound load operational design .
Characteristics load torque power motor single phase low low end magnetic.low magnetic flux cutting a contact low wave mid ordinate rule Iave/g=i1+i2+i3....!in/n) IRM=I.
Low explain generating and supply power.low inductance of signle phase over headline low capacitance directly proportional ....low frequence f=1/2π√lc..
C=1/36×08xloge(d-r)/r...
Low input value power factor delta value low three phase delta connection power=I.(Re .cos|+xesin)x100
Low connected alternator 1200 rev.low transmission line supply power reaction load.pf.linge voltage Eo=VP.zr/Za..cos/.r=R/zr,. S2π.t.(ns_nr)/2π .
Low power factor line current power p=√3.IL.cos.
P1=vl.ilcos(30+0); tanπ=xo/ro. f=n.p/60.... Eo=n.eff/√3. Zo=R+jix...
Low induction motor E=2,22.k.d.kp.z.|.f.
Poe evidence reasoning judgement low relate construction electronics industry components drwawing electronics switch connector schematics industrial circuit electronics logic.zt=1/z1+2/z2+1/z3.
Low high information filter phase is oscilloscillator motion .low filter LCD.low stable voltage outcome.
Low control voltage frequency counter low detector transducer bridges thermostable .low trigger circuit operational.low explain transistor fixe bias common emittor .
Low explain make wath difference into divider bias RB.rc.vbe.vce..device faulty labell.
Low criteria oscillator irrespective of type wave produced frequency oscillator must stable amplitude output constant provision mode for positive feedback.low required timer 555precission functional monostable DC voltage converter.low operational amplifier audio .apvoltage.non inverter summing.
Low have different ialVo(t) integration comparator..low instrument evidence Schmit trigger and test low type.
Wath alternator difference integrator
Attandance police theory trade..
Formal test 1.2. level
Resolve crime applied policing.on assessment policing engineering.and circular extra subject report learner Exam
Test topic crime prevention..
Assessment task according to the schedule.
The assessment tools or instruction.rexord of marks
1.Number of units/assessment/coverage
2/formal written test)/one completed topics.
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2.practical assessment coverage the related subjects outcom 2320..
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Time table/certificate n1/n/2/n/3/n4.n5.n6.n diplomat full time
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Internal
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Master. Master doctoral saqa NQF level 6.7.poste doctoral labour relations bargaining engineering..

7..n1.n2.n.3.n.4.n.5.n.6 . Engineering trade national diplomat certificate engineering time table short time full time table high education engineering
7.1.Electrical engineering time table .
7.2.Mechanical engineering time table.
7.3.Civil engineering time table .
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Time table trade theory electrical engineering fundamental n basic system system trade design process trade control trade fabric trade engineering .. fundamental operational requirements trade sylabus explained.

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Textbook questions explanation
Career system advanced machine...control process..projet fabrics
Certificate.
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8.educator technology technical .phase assessment inspection tutorial lecture ..
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Educare n4.n4engin labour n4.
Subject ..lecture
Research TVET lecture doc n7...

TSHINGOMBEKB TSHITADI <**tshingombekb@gmail.com**> Tue, Aug 9, 1:45 PM (5 days ago)

to
me

1.Reasoning for irregularities no submitted.
2.Reasoning judgement no filing dismissal
3.Reasoning method trade required meeting subject
4.Reasoning
Irregularity statement answered.

Irregularity affidavit answers sock
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Resolving assessment
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Tue, Aug 9, 3:44 PM (5 days ago)

to
me

Institute and college assessment exercises book
1 .Time..08:00-08 -90/08:40-09-20/09:20-10:00/10:40-11:20/14:00/
2 .Week day :award certificate course assessment guidelines information guidelines orientation research . Engineering ass./ass test trade exam// assess information orientation assessment engineering exam /// information orientation assessment////information orientation assessment engineering////information orientation assessment.swmester 1 term 1.2.3.
3.week certificate : assessment engineering trade theory electrical, industrial electronics.mathematics ,physic engineering , engineering science drawing Engineering./trade theory electrical industrial mathematics physics Engineering // . Trade theory /// trade theory//// semester 2.term years 4.5.6
4.Week certificate:ass schools educare ,ass engineering.assessnated assessment test /...//...///...////...////semester 3.term .7.8.8
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Week diplomat
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Institute and college assessment award price recognised learner
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Learner allocation subject 5/4
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Regulatory 18month2year week presentation credits exercise
Name/surname/I'd number/subject course/ time sign
Tshingombe/Tshitadi.

Total record attandance award 18 months irregularities internal external on line presentation oral
Facitator
Information pay files irregularity documents system judgement report marke internal and external.analyse grid icass rubric material trade theory problem material learner solve station police

Time table subject course class studie engineering circulum assessment police and assessement engineering integrity exercise book note book completed system manueldisciplinairy learner conduct , manuel guideline orientation outcome / learner , inspect moderato ,

1 .Time	**08:00-08 -**	**-90/08:40-09**	**-10:00/10:40**	**11:20/14:00/**	**14/**	**14**	**14**	**14**	
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Week2 Day	Frame work	Man syt,ass	infor	Ass infor,as	Ass.				semester
Week3	certificate : assessment engineering trade theory electrical	industrialelectronics. Mathematics	physic engineering	engineering science drawing Engineering./	electrot	Instrul	ptotc		Term semmester
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Week6									term
Week7									term

Institute and college assessment award price recognised learner
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Learner allocation subject 5/4

High education training.
Department training.
High education and training
Your examination number/usamenhonommer

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Examination centre/Eksamenentrun
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Subject/bank,……level/…
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QUESTIONS/MARK/PUNTE///INITIALS////FOR REMARKING HERMERK
1/H.T.U/..M.SM.CM.////.HT U/E.INITIAL
1.
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15.
TOTAL..

QUESTIONS	**MARK/PUNTE**	**INITIALS**	**FOR REMARKING HERMERK**		
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TOTAL..					

INSTRUCTION TO CANDIDATE REGARDS THE RWITEN OF THE EXAM
Department of higher education and training.
Republic of South Africa
ADMISSION PERMIT AND EXAMINATION TIME -TABLE.
50408782 N4: ENGINEERING STUDIES

(REVISED)
EXAMINATION NUMBER 2100002023812..ID
EXAMINATION CENTRE
899993812 SHALOM TECHNICAL CENTER .PTY LTD
AFRIC TRAINING

SUBJECT///PAPER ////DATE//// TIME
F8080074 ELECTROTECHNICS N4 EXTERNAL EXAMINATION ////1//20220201////9.000
F8080164 INDUSTRIAL ELECTRONICS N4 EXTERNAL EXAMINATION///1//20220208////9.0
F15070434 ENGINEERING SCIENCE N4-EXTERNAL EXAMINATION 1 200220207//9.00
F16030164 MATHEMATICS N4-EXTERNAL EXAMINATION/1//20220207.9.00
FULL TIME.P.
RE MARKING FOR REMARKING XHEING MUSTE SUBMITTED WITH 10 DAYS AFYER THE RELEASE OF THE RESULTS AT CD NEA ..
CANDIDATE ARE RESPONSIBLE TO ENSURE THAT THEY RECEIVE THE CORRECT QUESTIONS PAPPER TO ENSURE THAT THEY RECEIVE THE CORRECT QUESTIONS PAPPER.
N3 ELECTRICAL TRADE THEORY N3.2022. ..
ID 2004007064381/

Formal technical INSTRUCTIONS in the ra report 191..n n3. ..191..
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Formal RSA 191. Assessment task the icass trimester engineering
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75 78 lecture day general business services lecture.

899993812 center St peace college n5/ n6 , 2100002023812..ID
revised

SUBJECT	PAPER	DATE	TIME
F8080074 ELECTROTECHNICS N4	internal	20220/	9.00
F8080164 INDUSTRIAL ELECTRONICS N4/n5/n6	internal	20220/	9.00
F15070434 ENGINEERING SCIENCE N4/n5/6	internal	2022/	9.00
F16030164 MATHEMATICS N4/5/6	interal	2022/	9.00
N3 ELECTRICAL TRADE THEORY			
INSTALLER RULES			

Analysis grid for all test and must be submitted for Pre assessment moderation..
Subject level learning objectives//questions/formative/short responses /medium response/extend response /mark

Subject level learning objectives	questions/ formative				

Weighting:The following weights are consequently awarded to each category

CERTIFICATE AND DIPLOMAT ENGINEERING ELECTRICAL

Knowledge and Understanding	**APPLYING**	**ANALYSE SYNTHESIS EVALUATION**	**INVESTIGATION DISCOVERY/ DESIGN / ASS POL**	**TOTAL CRITERIA CLOSE**
3--40	**30-40**	**20-25**		
			40 ,60	**10 POINT SCORE**
REQUIRED TASK OPERATION				
MATHEMATIC **ELECTROTECH** **POWER MACHINE** **ENGINEERING SCIENCE**				

STUDENT NAME : TSHINGOMBE TSHITADI

ID NUMBER :

ID DIPLOMAT NUMBER : ..Q

SHEET MARK SUBMISSION EXPLANATION EXAM

MODULE /SUBJECT ELECTRICAL ENGINERING	**WEIGHTING**	**OUTCOM CRITERIA CREDIT CLOSE AWARD SCORE FINAL /QUALIFY**
MATHEMATIC **1.** **2.** **3.** **4.** **5.** **6.** **7** **.8**	**100MARK**	**MIN / MAX 100MARK**
ELECTROTECHNICAL	100MARK	
POWER MACHINE	100MARK	
ENGINEERING SCIENCE	100MARK	
ELECTRICAL ENGINEERING DIPLOMA / STATEMENT STATEMENT	400MARK /	400 MARK
RATING		

SCHEDULE CASE REGISTRAR ATTATNDANCE RECORD SHEET AMANDEMENT TEXTBOOK WEEK COMPLETED COVERY , INVIGILATOR, AMANDMENT COPYRITH DARLO. / N1-N3////N4-N6

NAME SURNAME	WEEK /PRESENT ABSENT	ID NUMBE, TEXT BOOK NUMBER ISBN	CELL PHONE /TIME/IN OUT	SIGN

allocation /Toalmark.multiple choice medium response short explanation description required a couple's of sentences .extere response long explanation required.pre assessment moderate process lecture response settings a test assessment task.pre assessment.. responsibility time hod.. subject lecture trimester semester manage due.technical criteria content coverage..final approval of the asssessor check layout font submit.. analyse grid.1.2subject aim learner objects are listed.conceptual visual level indicator per questions instruc.spreadconcept..formal cleared correct check page break spacing criterion content..content lecture subject assessment file item file.class registered subject sylabus work schedule plan work plant pace .plan lesson and teaching resources.
Evidence of additional support task as required improve.munite of subject meeting.does does the assessment file containing,.moderatorreport.evidence of post assessment moderate handrwite or ... subject.level.program drop total.percentage total plane .. trimester assessment task tool content duration mark moderator submission date Pre assessment.assement date completion date of post moder..

1.Subject. Years.... trimester ..
icass trimester mark sheet..Cass mark task
.final icassmark..test..test convent the mark to weighted /%total 100..

Irregularity..forfeitresultat be suspended from writing exam for 11month..examadminission permit and examination instructions....
Check.
Task efficiency time management..standardrequired.correctly per the standard required.4_5. Required struggle management organisation completed..correct task standard.
Task criteria possible weight area..
Evaluation is conducted continuously means two formal test college test mark 40bfinal exam electrotech engineering
Knowledge and understanding., applying, analysis synthesis and evaluation. Rwiten
Information processing n5.n.6
..guidy marking.
The candidate cannot fail because could not completed or pass the timed accuracy.
Total questions Papp ..pepetive accuracy process errors must indicated red repetitive accurate..
All key.
Method marking..possible mark .if only 1/4of questions is completed original mark will be used for marking of questions complex originally..
Mark for all the question .row mark diverse by 3..
Questions continued.
Total mark .=50 1/2= accuracy =40
Display=10..becomes full mark ..
2.computer practice
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The boxes are connected by line arrows.can give step problems.
Organisation structure of a company.
Structure not .
Process operational brepresented .
Connecting arrountflow .

3.sectiom basic principles of law .
Section b account.
Commission structure

Non national certificate installations rules second pepper
time
:3hours .marks 100.

1. Answer all the questions
2.read all the questions carefully.
3. Number the questions according number.
Even though explicit started in question.all the questions carefully.
Number..sabsdan.aswr word perfect .

Final revised time table Engineering studies examination 2020..
N1..n4electrotech industrial n1...

High education and training.department high education and training
Republic of South Africa ..TVET St peace college.
National certificate.
Engineering
Code. Test 1/ 2 examination coverage work home work class work assessementself completed
April July August .. November
N6..N5
TIME :3HOURS

MARKS:100
INSTRUCTIONS AND INFORMATION.

1.answer all the the question .
2.read all the questions carefully
3.number the answers according to the number system used Ind this question papper
4.sketch must be larger neat and fully labelled
5.keep subsection questions together.
6.star each question with the formula and substitute value.
7.round off each final answer to three decimal.
8.write nearly and legibility.
Questions 1. Define of the term
1.1.1
1.1.2
1.1.3
1 1.4
1.1.5
Questions 2.completed the following sentence by writing the missing word or words next to the question number.
1.2.1

1.3 name two source .of

1.4. study diagrams below

1 .4 .2. wath is used of the apparatus show in the diagram.
1.4.3. briefly explain the result of the process of the process shown in the diagram.
Questions 2
2.1 given:
2.1.1 what is the formula used for?
2.1.2 given the mean of the symbol in the formula
2.2 .if the gas consta r of fax is j/kg and pressure of. Mmmhg boiling of water .
.
2.4 briefly explain the difference between
2.4.1
2.4.2

2.5 study the question below and answer the questions.
.
2.6.Calculation the value fundamental and.

Questions 3.
3.1 list four factor that influence the amount of eath
3.2
3.4.
Calculate
.3.5.
Questions 4.
4.1state low of
Dream a diagram

Department of higher education and training
republic of South Africa national certificate .
TVET St peace college.

.examination hi
Mathematics n.5.n.6
Time :3Hours

INSTRUCTIONS and information.
1.answer all the questions.
2.read Al the questions carefully
3.number the answers according to the number system.used in this question papper.
4.all final answer must be rounded off to three decimal place.
6.question may be answered in any.but subsection of questions must be kept together.
7.use only blue or black link.
8.write nearly and legible.
1.1 determine the following limited
1.1.1 Lim e. /xe-2x
x_0
1.1.2 lim(secx_tanx)
1.2 determine whether f(x)=x-27./x_3 is continuing at x=-3
Questions 2.
2.1 determine the derivative of f(x)=cosx from first principles

Hint:Lim cosh-1/h=; Lim sinh/h=1
h_0. h__0
2.2 determine dy /d x in each of following cases simplified is
2.2.1 y=cos (x-4)+cos(x-4)
2.2. 2
2.2.3

2.3 determine dy/DX with the of logarithmic differential if..
Arc(sin)=(x)
2.4 given 3x_xy=2
2.4.1 determine the slope dy/ dx.of the tangent at the point (1;5)
2.4.2 hence, determine the equation of tangent at point
Questions 3.
3.1 given f(x)=x(x.x.x-5)-4
3.1.2 verify.using table

3.2 two side rectangular length at rate 3cm/s.50 cm..

3.2.1
3.2.2

3.3 a particle move in straight line according to the distance formula.
S(t)=√t(3-3t-t.t).
3.3.1 calculate the velocity of the particles after 3.5 seconds.
3.3.2 calculate the acceleration after 2 seconds .
Questions 4.
4.1 determine:|(e+e).(e-e)DX
4.2 determine|ydx in each of following cases:
4.2.1 y=sin/√1+cosx
4.2.2 y=x.sec.x.x
4.2.3. Y=cos6x.cos2x
4.2.4. Y=2/3+4x.x
4.3. Determine int.ydx by trailing the integration into partial fraction:
y=x.x.x -2/x.x.x.x_1
4.4 determine .into x.x/x-5dx
..
Questions 5.
5.1 given the curves f(x)=√16-x.x and g(x)=4-x

5.1.1 calculate the magnitude of the enclosed area
.
5.13 calculate the volume when this area rotate about the x axis.
5.2 prove that integinf to o -5 e exp -st St =-5/s.
Questions 6..
Dy./DX=tan.tan y/cosec.coaec .x
6.2 determine the particles solutions of the differential equations d.2y/DX.x=1/2x.x+3/2x+π
For which y=2 and y=-3when x=1.
Total 100

arks100.
Compare
Scale 100x2/2
Explanation fundamental core value mark.
Weghting fundamental demonstration knowledge analysis aynthes mark point
Formula sheet value .
Defense purpose value factory development system.
Assessment police circular reasoning
Statement.

Department of higher education and training
republic of South Africa. ..St peace college
National certificate
Electrotechnic n5.n6../
Time 3houts
Marks:100

INSTRUCTIONS and informaton
1.answer all the questions .
2.read all the questions carefully.
3.number the answers according to numbering system used in this question.
4.writr neatly and legibly.

Questions 1.
1.1 state two methods of changing the direction of DC machine.
1.2 where are the compensation windings situated and how are they connected?
1.3 the number of series turns per pole required on 355 kWh long shunt compound generator must be determined to enable it to maintain a constant voltage at 580v.betwen no load and full load . without any series winding,it found that the shunt current has to be 6A on no load and 7,5 on full - load, to maintain the voltage constant at 580v.number of turns per pole on the shunt winding is 2100.
1.3.1 calculation the demagnestising and cross-magnetising ampere-tirns per pole
1.3.2 if the series coils where wound with 12 turns per pole and had a total resistance of 0,08 ohm determine the value of diverter resistance that would be required to give level compounding

1.4 A 625v, 35kw, four-pole DC motor has a wave-wound armature with 900 conduct and the commutator has 180 segment.the full-load efficiency is 85% and the shunt current is 2,25A. The brushes are shifted backwards though1,5segment from the geometrical neutral axis.
Questions 2.
2.1 the voltage across a certain circuit element is v(t)=800sin(314t+30degres)v.
The current flowing in this element is I(t)=8sin(314t+30degre)A .
2.1.1 the nature and magnitude of this element.
2.1.2 the time period of the waveform.
2.2 circuit consisting of a coil with an inductance of 140 micro Henry and resistance of 8.25 ohm is connected in parallel with a variable capacitor.this combination is the connected in series with a resistor of 7300ohm across a 380v supply having frequency of 1mhz
Calculate:
2.2.1 the capacitance of the capacitor required to give resonance.
2.2.2 the impedance of the parallel circuit.
2.2.3 the current in each branch of the parallel circuit.

Questions 3.
3.1 name three methods of reducing leakage flux in transformers.

3.2 A 24 KVA,3 200/800 single -phase transformer, operating at no-lo g has the following resistance and leakage reactances.
Primary winding: resistance 8,4ohm reactances 14.4ohm secondary .resistance 0,75 ohm reactances 1,5ogm
Calculate the secondary voltage at full load with a power factor of0,8 lagging, when the primary voltage remaining constant.
3 .3 three similar inductor, with a resistance of 29ohm each and inductances of 0,038h are connected in delta to a three - phase ,535v,50hz sinusoidal supply.
Calculate
3.3.1 the value of the line current.
3.3.2 power factor.
3.3.2 power input to the circuit.

Questions 4.
4.1the input power to a 2950v three- phase delya- connected induction motors is 135kw..the power factor the motor is 0,85 lagging.
Calculate:
4.1.1 the line and phase currents
4.1.2 input power reading on the two watt-meters
4.1.3 KVA rating of the motor
4.2 A three-phase transmission line supplies a 1,73 me stat-connected load, having a power factor of0,85 lagging at a line voltage of 35kv.
The line has a resistance of85 ohm per phase and an inductive reactances of 155 ohm per phase.
Calculate:
4.2.1 voltage (line)at the sending and end
4.2.2 the per unit regulation

4.2.3 efficiency of the line

Questions 5.
5.1 explain the term hunting or phase swing with reference to synchronous motors.

5.2 A three -phase slip-rinh induction motors gives a reading of96v across the slip- rings on open circuit with normal stator voltage applied.the rotor is star connection and has an impedance of0,7+j9 ohm per phase.
Calculate the impedance:
5.2.1 at standstill with the slip-rinh joined to a star connected starter with a phase impedance of 4+j7 ohm
5.2.2 when running normally with 5% slip.
5.3 a three-phase induction motor with a star- connected rotor, has an induced EMF of 145 v between slip-rings a standstill on open circuit.the rotor resistance and reactance per phases at standstill is 1,25ohm and 6,75ohm respectively.
Calculate the following when the slip - rings are short - circuited

5.3.1 the rotor starting current per phase.
5.3.2 the power factor.

5.4 A three-phase stat-connected alternator. driven at 1200 rev/ Min. Is required to generate a line voltage of 885 vat 6..opencircuit.assume full fullpicthef coils and the stator has 8 slots per pole per phase and 6 conductor per slot (KD=o.96)
Calculate.
5.4.1 the number of poles
5.4.2 the useful flux per pole.

Total 100marks..

Explanation oral presentation. Topic research find
Assessment circular
Defense factor . Fundamental low demonstration low answers regularattendance verification.
critical assessment eng
Knowledge explain text book reference
Analysis discovery
Planer
Criteria outcome value reasoning Min max..50mark

Department of higher education and training
Republic of South AfricaTVET St peace college.

National certificate
Industrial electronics n5.n6.
Marks: 100

INSTRUCTIONS and informaton.
1.answer all the questions.
2.read all the questions carefully
3.number the answers correctly according to numbering system used in this question papper.
4.keep questions and subsection of questions together.
5.all the sketches at diagrams must be large .clear and neat.
6.show all the steps and calculations.
7.write neatly and legibly.

Questions: alternating current theory

1.1 draw the circuit diagram of a RC-coupling and show typical inputs -and output waveform of the circuit.

1.2 low and high frequency disturbance can be observed from different level of a square test waveform.
Different level of square test waveform.
Show the level involved by means of a neat sketch.
1.3 in a parallel Rl-circuit R=20 ohm,L=0,01mH.and VT=20v,100khz.
Calculate:
1.3.1ZT(answer in polar form)
1.3.2 IT(answer in polar form)
1 .3.3 IL(answer in polar form)
1.3.4 IR(answers in polar form)

Questions 2: power supplies
2.1 A power supply makes use of a bridge rectifier and a simple capacity filters the following values of the circuit are known:
VDc=12v,. Rl=100 ohm,. f=50hz before rectification.
2.1.1 C if the ripples factor is3%
2.1.2 cm across the bridge rectifier
2.2 A 500mw,10 v Ener diode is used in voltage reference source.
If the maximum supply voltage is 16v, calculate the value of the series resistor in order to protect thezener diode.
2.3 draw a neat labelled circuit diagram of a high,stable, adjustable power supply.thr circuit must use of a regulatory components and operational amplifier.

Questions 3: transistor amplifiers
3.1 state three factors which causes a variation on the collector current of a transistor because of a varying temperature.

3.2 the following values of a common emittor amplifier is known:
Rb1=15,97k ohm, Rb2=3k ohm, RE=120 ohm.
RC=480 ohm, VCC=12v, vbe =0,7 and beta=250
Calculate the value of be.Ic,IB.vce and VB of the amplifier (assume the transistor is made from silicone type material).
3.3 calculate the input impedance z; and the output impedance Zo of the circuit in
.question means of the appropriateethode if:
hie=1,2kohm;here=2x10 exp 4;hfe=100 and hoe=20 micro amper /volt (Rs=O)
Questions 4: operational amplifiers
4.1 explain the term drifting as applicable to operational amplifiers
4 .2 draw a neat, labelled circuit diagram of an active high -pass filter with unity gain.
4.3 calculate the _3db frequency of the filter in question .4.2 if both capacitors have value of 0,1 if while both resistor have value of 1 k ohm
4.4 draw a neat, labelled circuit diagram of a practical operational integrator.

Questions 5: integrated circuit.
Indicate whether the following statement are true or false. Choose the answer and write only true or false to the question number (5.1-5.3) in the answers book.

5.1 CMOS-integrated circuits s have high nose immunity.
5.2. CMOS - integrated circuit are susceptible to static charge because of their low reactive input
5.3 when one works on a circuits with CMOS-Integrated circuit on it, the power supply to the circuit must be switchined off.

Questions 6: transducers.
6.1 draw a neat, labelled circuit diagram of a thermistor control circuit that makes use of an operation amplifier and a dc-wheaston bridge.
6.2 if the bridge in question 6.1 is balanced at 25 degree.
RT=10kohm at 25 degree Celsius.
A=0,2169
Beta=3200 and a 10 v battery is connected across the bridge, calculate,
6.2.1 the value of the thermistor at 30 degree Celsius.
6.2.2 the gain of the amplifier with an output of 10v.

Questions 7: electronic phase control
Draw a neat, labelled bloc diagram of a phase control circuit that makes use of two silicon controller rectifier for full- wave AC - control. Also show the trigger and load waveform a phase angle 90 degree.
Questions 8: test equipment
Draw a neat, labelled circuit diagram of an R-c- phase shift oscillator.
Calculate the values of the resistor if the oscillating.frequency.is 50 khz and the capacitor value are 10 NF.
9.3draw an neat , labelled circuit diagram of a Schmidt - trigger

Department of higher education and training
Republic of South Africa
National certificate
Engineering physics n 5/n/6..
Time 3Hours
Marks 100.

INSTRUCTIONS and information
1.answer all the questions
2.rear all the questions carefully
3.keep subsection of questions together.

Questions 1
1.1 description examples of diffusion in:
1.1.1 solids
1.1.2 liquid s
1..1.3 gases.
1.2 a spaceships on its to the moon reaches the point where the moon and the earth exert.bequal force of attraction on it.

calculate how far this point is from the aerth. The distance from the moon to the Arth is 4x10 exp .m
1.3 calculate the osmotic pressure of a sugar solutions that rises 200 mm in the tube of a funnel, when the sugar solutions has a density of 1,5 g/cc.
1.4 the statement below refers to the give diagram showing the menscus of a liquid in a thin glass tube.

Indicate whether the following statement are true or false.choose the andwe write only true. Or false next to the questions number (1.4.1-1.4.3) the andwe book

H
1.4.1cohesion is greater than adhesive .
1.4.2 the liquid in the tube could be mercury (not water)
1.4.3 the angle between the surface of the liquid and the containers is more than 90 degree (alpha more 90 degrees)

Questions 2
2.1 after the pressure on a quantity of gaz was increased adiabatically from 250kpa to 2,1 MPa the volume was 5,8 meter cube heat capacities for the gas is 1,64 calculate the original volume of the gas
2 .2 A.200 m length of black polythene pipe of 50 mm external diameter is connected to the inlets of a swimming pool pump while the water is circular slow assume that to energy is lost the mass of water in the syy is given as 20000kg the pipe is behind glass and is at a constant temperature of 60 degree celsius.the shines directly . perpendicular on the pipe for 8hour. assume that the sun is only in contact with half the pipe for 8hours. Assume they sun is only in contact .
With half the surface area of the polythene pipe emissivity for black =1.

Calculate the following

2.2.1 the area of the polythene pipe absorbing energy from the sun
2.2.2 the rise in temperature of the water on the system
2.2.3 the energy absorbing by the polythene pipe

2.3 write a paragraph on the conduction of the heat discussing the medium involved and the role molecules player on the process.
2.4explain the meaning of and give the si unit for each symbol in the formula below:
V=√3RoT/M
2.5 calculate how much work is performed by a gas which initially has a volume of 0,003 meter and the temperature of which rises from 27degre Celcius to 227degre if the pressure remain a constant at 2x10 pa
2.6 a neon light tubes work from 250 v and drawing a current of 0,48 the tube has surface...area of 0,302 meter square and has a eorki temperature of 50degre celciy.
If e=o,25 calculate the following:

2.6.1 the electrical energy available in watts..
2.6.2 the heat energy loss..
2.6.3 the light energy radiated..
Questions 3
3.1 calculate the magnetic flux density at a point..at a point when a current of 6 A is flowing through a circular wire..of 30. Cm diameter. P is the centrecentre of the circle.
3.2 a transformer has 2400. turn on the secondary side and delivery s 600.v calculate the turn ration (primary secondary if the supply voltage is 220 v.
3.3 a current _ carrying conductor 0,5 m long, moves at 0,2m/s perpendicular to a magnetic field of 4 Tesla (WB/m) the resistance in the conduct is 4 ohm calculate the following:.
3.3.1 the induced EMF.
3.3.2 the current through the conduct.
3.3.3 the force on the conductors.
3.4 description the difference between the construction of a generator and of an alternate.hoe do you distinction between them in term of current.
3.5 completed the following sentence concern the construction of a galvanometer using any of the following suggestions material.in the list below.
Copper,softiron.nulon.aluminium
3.5.1 the moving coil made of fine wire.
3.5.2 the coil is wound around a cote..
3.5.3 the framework, within which the coil is held, is made of
Questions 4.
4.1 .4.1.1 wath is the processing called when molecules diffuse through a sermipermeable.membrane
4.1.2 describeda appropriate example of the process in question.
4.2 an iron ball of diameter 16 cm and a mass of 14kg is suspended 3m from the floor by an iron wire iron wire of outstretched length of 2,8m the diameter of the wire is o,9 mm if the ball is set swinging a downward force of 260n is exerted by the the ballast it's lowest point by how much does it clear the floor ? Young module for iron =1,86x10 pa
4.3 an Observer at the blood donor service notice that blood rises 6,8mm on a tube with a 1 mm diameter Calculate the density of blood if the surfaces tension is given as 0,02 n/m and contact angle is 5 degree
4.4 ammonia had a molecular mass of 7 kg / mol and diffuse at a rate of 0,222l/Min
Calculate the rate of diffusion of carbon monoxide gas with a molecular mass of 28kg/mol
4.5. write short notes on
4.5.1 adhesion
4.5.2 cohesion

4.5.3 viscosity

Total 100.
. explanation.

Information processing n5.n.6
..guidy marking./ tst 1. 2

The candidate cannot fail because could not completed or pass the timed accuracy.
Total questions Papp ..pepetive accuracy process errors must indicated red repetitive accurate..
All key.
Method marking..possible mark .if only 1/4of questions is completed original mark will be used for marking of questions complex originally..
Mark for all the question .row mark diverse by 3..
Questions continued.
Total mark .=50 1/2= accuracy =40
Display=10..becomes full mark ..
2.computer practice
Database documents the doc save.diagram chart. Show step step. Diagrams the represents an Lgorith.
The boxes are connected by line arrows.can give step problems.
Organisation structure of a company.
Structure not .
Process operational brepresented .
Connecting arrountflow .

3.sectiom basic principles of law .
Section b account.
Commission structure

Department of higher education and republic of South Africa
National certificate
Fault find and protective device N5
Time 3hours.
Marks: 100

INSTRUCTIONS and informaton
1.answer all the questions
2.read all the questions carefully
3 number the answers according to numbering system used in this question paper.
3 .writing neatly and legibly.
 Statement question answering true or fals make papper verification
Questions 1.
Designi and drawing only the control circuit of the following sequence start:

Press start button -motor A
After 10 second motor b stars after another 10 second Motor a stops..all the coils are 380 v and the timer are set 10 second.
Note : show all the protection and safety equipment.

Questions 3
3.1 name two type of voltmeter commonly.use in practice.
3.2 draw a simple block diagram of a digital voltmeter.
Questions 4.
4.1 make a labelled freehand drawing of the general diagram of feedback amplifier.
4.2 convert the following number to the base show in brackets
4.2.1 48
4.2.2....10111,011

4.2.....8,4375.

Questions 6
6.1 Draw and labels the symbol and consideration of an act.
6.2 draw a labelled vi character curve of an act.

Questions 7
The figures on the diagram sheet attached show that contractor M does not pull in
Questions 8.
8.1 wath is x-y plotter
8.2 state four advantage of the x y plotter
8.3 name four feature of the x -y plotter.
Questions 9
Define the following :
9.1 slip - ring
9.2 primary (of an electrical machines)
9 3 .segment
9.4 stator
9.5 squirrel cage rotors
Questions 10
10.1 explain how dynamic braking..used to decelerated..a direct - current Motor.
10.2 explain why you cannot start a large direct current motor without a starter..
1500kg of water from 10 degree to 40 degree assuming 75 % efficiency to account for heat transfers the surrounding the. Of electricity is 9 cent kW
Given
.1500x(40-10)=54000
Effb75%. =72000kw

Unreasonable result what current is head to transmit 100x10mw of power
At 480 v..(by transmission line if they have 100 resistance.

What is unreasonable about this resi.
Which assumption are unreasonable.

Department of higher education and training
Republic of South Africa
Non national certificate installations rules second pepper time
:3hours .marks 100.

1. Answer all the questions
2.read all the questions carefully.
3. Number the questions according number.
Even though explicit started in question.all the questions carefully.
Number..sabsdan.aswr word perfect .
7. Candidate muster pass papper 1 and papper 2.with 50% each.both examination rwite. During the same exam period must be pass 12 month auther wise re rwite.. statement of resul issue for accreditation purpose statement of results will be issued candidate meet prescription of the labour .use pen black.

Questions 1. Sans 10114-1 2017 installation requirements current carrying capacity of conductor and cables. Six cables of the dames size installed on metre deep in a trench that has an average soil temperature of 30 c each cable a sustain current carrying capacity of 66.52A.and thermally resistivity of the soil is 0,9 km/w there is not space between cables.
1.1Calculate the standard rating of each 1.2.cable installed in pipes and buried in the ground.
Questions 2; sans 19142-1 of 2017 installation requirements installation of conductor and cables .
3.1 wath are the indentification for a conductor.
2.2 state eight instance where PVC insulated multicore cable with a bare Earth conduct and cable with metal stiffening may be used .

Questions 3. Sans 10152-1 of 2017 installation requirements: distribution boards.
Briefly explain the requirements regarding warning label that shall be fitted to all distribution board.
Questions 4
Sans 10142-1 of 2017 verification and certificate prospect short circuit current.
4.1 give the formula to calculate the source transformer and explain each item formula.
4.2 calculate the estimated length of 70mmx4core aluminium cable with an impedance of 0,0263 0hms
Questions 5 sans10142-1 of verification and certification testing.
. Briefly explain how following test can be performed:
5.1 continuity of bonding.
5.2 resistance of the earth continuity conductor.
5.3 voltage. Available load (worst conditions)
Questions 6: sans 10142-1 verification and certificate test reports..
6.1 state three test reports applicable to this of sans.
6.2 name four of the five type of electricity supply system mention in section 2.(Installation of the test report typical of electricity supply system mention in section installation of the test report.
6.3 state five electrical test that can be performed at the distribution board .with supply available and can only be performed using a test.instrument.

Questions 7 sans10142-1 of 2017. Installation component. Install fixed electrical installation .
Questions 8. Sans 10142-1 of 2017. Calculation of voltage drop.
Calculate the following from the diagram.
8.1 the estimated cable size between the transformer and the db.the no load voltage measure at the db is 225v.
8.2 the maximum distance allowed between the db and the pump.
Transformer 11kv/230v 0.9pf signle phase....20 m ..distribution board 80 a 225 v no load ..4mm x3 Coren..pump 1 phase 5kw/230va..
Questions 9. Sans 1014 of annex earthing arrangements and equipotential bonding of information technology installation for functional purpose.
State the conductor that may be contained to the earth busbur of information technology installation.
Question 10:..sans 1973-3 of 2008; safety of assemblies with a rated prospect short circuit current of the up to and including 10 kA: busbar and wiring system ..
True false
10.1 the current density of phase busbar shall not exceed 2,0 A/mm for busbarcurent up to and including 630A.
10.2 the sizes and designs of phase busbar shall not exceed that could occurred at the supply terminal of assembly.
10.3 standard colour coding. Red yellow blue or number L1,L.2,L3, shall be used to identify a phase busbar
10.4 green /yellow shall be used for the earthingbusbar and black for the neutral busbar.
10.5 ifcolours is used for control wire coding any colour may be used except green yellow and green black..
10.6 electrical equipment shall be selected in accordance with the used technical and installation knowledge for enclosed assemblies.
10.6 electrical equipment shall be selected in accordance with the user technical and installation knowledge for encode.
10.the power loss lead dissipation capability of the assembly may be exceeded if monitorer.
10.9 the dimensions of the joining plates (fish plate) of the busbar shall be similar to those of busbur and the overlap on each side shall be at least equal to the width of the busbar..
10.10 conductor installed within a fault free zone need not be insulated where they could touch conductive parts..
Installation component stand fixed electrical
..from the point of control to the point of consumption..stove coupler socket wall nice vc switch .isolation transformer.lampmetall firing circuit breaker terminal earth leajagr
Sans10142-1:2017.
Multicore PVC insulated armoire cable sans 1507 voltage drop bbperamper meter aluminium conductor.
Conductor operating temperature 70.
Conductor cross sectional area.two core d.c.two core cable. MV/a/MB .4,5..r,x.z.../////three core or four core cable phase a.c MV/A/m. r,x,z 3.9. ..
In the case of single circuit the return path has been account for the given.
..
Correction factor for soil temperature maximum conduct temperature 70 Celcius.
Soul tempera.correction cable buried directly in pipes in the ground....
Therminal resistivity soil km/w..cable buried directly in ground..cable installed in pipes buried in ground ..the correct factor have been average over range size consult ..cable..Carycurent neutral correspond reduced load phase ..
Unbalance circuit..harmony.. impedance of 6000/1000

Department of higher education and training
Republic of South Africa
National certificate examination
Mathematics n6./ Level 6/ .nqf 6. ...
Time 3hours.
Marks:100
Instruction and the questions.

2.read all the questions carefully.number according used.
Questions.1.
1.1 given z=1/cos.cos.cos (5x+2y)
Determine minimum..
Partial z/partial /x gradient . Variation differential.
1.2 given x=1+2t and y=3/1+2t..
Determine
1.2.1. Dy/DX.
1.2.2 d.dy/d.x x

Questions 2
Determine integral ydx if
2.1 y=e exp- 3x cos 3.x
2.2 y=-e-6x
2.3. y=tan.tan.tan.tan.4x..

2.5 y=ln(1/x)

Questions 3.
Use partial fraction to calculate the following integrals.
3.1 integral. x.x.x +2x.x-4x-11/(x+3)(x-1).dx

3.2 integr 6x.x -4x+10/x.x (x.x+2).dx.

Questions 4.
4.1 determine the particular solutions of x Dy/dx-2y= x.x.x. cos x at (2;1)
4.2 determine the general solutions of d.dy/dx.x -dy/dx-2y=e exp 2x
Questions 5
5.1 ....5.1.1 determine the points of intersection of the graphs of y = y=2x and 2-1/2x.
Sketch the graph and show the area bounded by the graph of and the axis
Show the representatibe strip / rment you will use to calculate the area.
5.13 calculate the area described in question .
5.1.4 calculate the area moment about the y acid as well the dosty from y acid of then centroid of the area in .
5.3 sketch the graphy of x.x+y.y=49.
Show the area in the first quadrant bounded by the graph ,the line y=2,y{ 5 and the y =2,y=,5 and the u axiy
show the representative strip you will use to calculate the volume when the area is rotated about the y - axis.
5.2.3 calculate the volume generated when the area described in question .5.2.1 rotated about the y - axis.
5.2.3 calculate the distance from x axis of the centref gravity of the solid.of obtain when the area in question.rotate about the y - axis

5.3 5.3.2 sketch the of y= cosx and for 0<x< π/2
Show the area bounded by the graphs and y- axis.show the representative strip you will to calculater the area.
5.3.2 calculate the area described in question
5.3.3 calculate the second moment of area about y -axis pfarea description.
5.4.1 the cross section of water tank is the form of trapezium the bottom the tank in .4m wide the top is 4 m wide and the height of the tank is 4 the.tank is full of water sketch the cross secty the tank and show the representative strip you use to calculate the area moment.veryi Al ed the tank.
Calculate the relation between the variable x and y
5.4.2 calculate the area moment of a vertical end of tank about the water level
5.4.3 calculate the depth of centre of pressure on the vertical end of the tank if the second moment of area is given as 69,333 M3

Questions 6
6.1 calculate the length of the curvr
y=x.x.x./4+1/3x from x=to x=4

6.2 calculate the surface area generated when the curve c=y-9 for <y is rotated about the x axis

Total 100

Department of higher education and training republic of South Africa
National certificate
Control systems n6
Time 3hours
Mark 100

1.answer all the questions.
2.read all the questions carefully
3.number the answers according to the numbering system used in this paper
4.insert competed three semloharithmicgrphpapperofbodr plot into the answers book before handing
5.write neatly and legii

Questions 1.
Explanation control action is independent on the output
1.2 slow variation of the output voltage or current of the amplifier whey the input signal is mainyenef at a constant level
1.3 response tends to overshoot the goal with oscillation decaying very slowly or not at all.
1.4 time take response to complete one full cycle.
15.
Condition brought about when two complementary energy strong components of a dusty procedure a oscillator between them
16.frequency produced when two comp energy -storing component of systems produced an oscillator between them.
1.7 sum of the transient response and the steady state response of a linear constant different equation
1.8 system where the output has an effect on Ty input to.maintain the outputs at a desired value.
1.9 mathematics equation containing elements of a system system to be transferred from the input to the output assuming all initial conditions to be zero.
1.10..shortland pictorial representation of the cause and effect relationship between the input and output of a system..
A ..
Time period
B. Closed-loop system
C.undamped natural frequency
D.feedback
E.total response
F.transfer function
G.underfamping
H drft
I block diagram
K resonance
K..
Questions dream block dit algebraic reductions,the control ratio of the bloc diagram
Questions 3.
The transfer function of an open loop control system is given as

G(s)H(s)=75/s.s+15s
..
3.1completed it by calculating the log magnitude and phase value for each the missing frequency
W(rad/s)
GaunA(db)
3.3 dream the bode plot for system on a three -cyckesemloharithmicgrap
Diagrams illustrate a closed loop gain versus phase plot on a Nichols chart
4.1 use the Nichols charter to determine each of the following.
4.1.1 the gain margin
4.1.2 the phase margin
4.1.3 the phase margin .
4.14 the phase crossover frequency
4.15the undamped natural resonance frequency
4.16 the peak frequency response
4.1.7 the peak magnitude and phase
4.1.8 the closed -loop phase
4.2 state whether the system is stable or unstable
Questions 5.
Diagrams illustrate a root locus plot of an open -loop system bas the amplifier gain varie from zero to infinity.
 Use the root locus plot to determine each following
5.1 the damping factor () at pointD
5.2 theundamped resonant frequency (en)a point d
5.3. the damped reason frequency (w n).
5.4 the gain constant ko at point D
5.5 the open loop poles
5.6 the frequency at which the system becomes unstable..
Questions 6.
6.1 convert given Laplace transform function to a function of S:.
F(t)=e at.dt
6.2 convert the given Laplace transform function to a function of t
F(s)=21/s(s+3)(s+4)
6.3 the input voltage to a differentor amplifier has an input voltage of 9v with a resistance of John and capabilities of 5uf
6.3drwan neat diagram. Of circuit
Calculate the output voltage of the circuit

Questions 7.
7.1 what is a triac.
7.2..
Questions 8

8.1 dream a neat labelled schematic diagram of a half wave doped control circuit for a separately excited motor.
8.2 give two disadvantages of using electrical power in electrical controller.
..
Questions.
9.1 Listen rotary pumps
9.2 Name type non positive displacement pump
9.3 give six advages of using fluids power
Questions 10.
10.1which type of filter is a c-r differential circuit
10.2 explain the term impedance matching of test equipment in oscilloscope.
10.3 calculate the value of the unknown frequency (fh) for the figures below.
Hint: fh/fv =>>
Fv=500hz.

wrote:

Power machine

Questions 1.
1.1 name one type of governor

1.2 completed the following sentence by writing only the missing word next to the question number (1.2)
1.3 name two main components of a steam generator plant.
1.4 variouse option give answer the following.
1.4.1 partial pressure of steam can be read from the steam table if the of condenser is know
1.4.2 equiangular blades mean that blade inlet and outlet angles are.
A 90.
B.the same
C.different.

1.4.3 potties of gases a step .

Questions 2
Balloons,

Quest 4 used steam ..

Questions 4.

Question 5

Questions 6
A jet a supplied. ..

Department high education and training
Republic of South Africa
National certificate
. examination electrotechnic
. Time.

Marking guidelines consist 12page/ tes

Chief marker
Internal moderator
MC

Concession

Reduce marks for questions 7.2 by 6 marks
Mark all candy out of total 94 marks
Convert the mark achieve out 94mark
Record the percentage achieve on the market sheet

Total 10
Questions 1 DC machines explain

1.

Questions 2 AC circuit theory
Explain three phase circuit..

Questions 3. Transformer
3.1explain

Questions 4. AC machine alternator..

Questions5.. AC machine synchronous motor.

Questions AC machine induction motors

Questions 7.generation and distribution of AC

Examination internal.. external

TSHINGOMBEKB TSHITADI <tshingombekb@gmail.com> Sat, Aug 27, 2022 at 5:52 PM

To: TSHINGOMBEKB TSHITADI tshingombekb@gmail.com

High education department

Training,st peace college

Certificate

Power machine

Time 3 hours

Questions 1.

A convergent nozzles receive superheated steam with a specific heat capacity of 2,76/kg,a pressure of kpa a temperature of 276 degree .the steam is expanding to a pressure of 600kpabwith a isentropic dryness factor of 0,945 which is 99,265% of the actual dryness factor. At the throat the pressure is 1400 kpa, the temperature is 205 degree Celsius,the index (n for the superheated steam is 1,3 and the velocity is 500 m/ s.the velocity at the inlet is negligible.

1.1 the specific anthalpy of the steam at the inlet of the nozzle.

1.2 the specific enthalpy, the specific heat capacity and the specific volume of steam at the throat of the nozzles.

1 .3 the isentropic specific enthalpy ,the actual dryness factor, factory the actual specif enthalpy and the specific volume of the steam at the exit of the nozzle as well ass the efficiency of the divergent part of the nozzle .

Questions 2the blade of two stage, velocity compounded impulse gas turbines has an average diameter of 976 mm and rotates at 3131r/Min.

The velocity of flow at inlet to the first stage is 225 m/s

.the velocity of flow at inlet to the second stage is 100m/s.

.the outlet angle of of the first row of moving blade is25 degree

The outlet angle of the second row of moving blade is 28 degree.

.the gas leaves of the turbine at angle of 80degree there is a 4%loss of velocity. Across all the blades due to friction.

2.1 construction velocity diagram for the turbine in the answers book by using a scale of 1mm=5m/s. Indicate the length of all the lines as well as the magnitude of the angle on the diagram.

2.2 determine the following the velocity diagrams.

2.2.1 the nozzle angle

2.2.2 the inlet angle to the fixed blades

2.2.3. the outlet angle from the fixed blades.

2.2.4the inlet angle to the second row of moving blades.

2.2.5 the inlet angle to the first row of moving blades.

2.2.6 the nozzle velocity in m/s

2.2.7 the velocity of the gas leaves the first stage m/s.

2.2.8 the velocity of the gas leaving the fixed blades in m/s.

2.2 9 the velocity of gaz leaving the in m/s

2.2.10. The relative velocity of the gas at in let first stage in m / s.

2.2.11 the blading efficiency.

Questions 3.

An open circuit, continue combustion, constant pressure gas turbines received air dry the atmosphere at 15 degree and compression it to five time the intake pressure in a rotary compressors air then passes through a heat exchanger in which 1018,574 if heating is added constant pressure per second from the combustion chamber the air expand s through a gas turbines to atmospheric pressure and at this pressure pass through the heat exchanger to the exhaust where the temperature is 231,6 degree Celsius.

The isentropic efficiency of the turbine is 82%,.

The air flow through the plant at a rate of 2,5 kg/s. Neglected the mass of the fuel and take gamma as 1,4 and CP as 1,006 KJ/ kg.k

3.1the absolutely isentropic and the absolute actual temperature after compression.

3.2 the absolute temperature before expansion,the absolute isentropic and the absolute actual temperature after expansion.

3.3the power developed by the plant in kW and the thermal efficiency.

3.4 the efficiency of the heat exchanger.

Questions 4.

At three stages -, single -acting, reciprocal compressor delivery 900kg of air per hours to an aftercooler at pressure of 4116pa.

The pressure in the first intercooler 336kpa..

The cylinder volume of the intermediate cylinder is 26 time it's clearence volume.

The temperature at the entrance to the low pressure cylinder is 27 degree Celsius

The rotation frequency of the compressor is 290 r/Min.

Intercooling is completed and the stage pressure are in geometrical progressive take R for air as 0,288kj/kg.k

Calculate the following

4.1 the pressure in the second intercooler in kpa , the pressure ratio and the pressure at inlet to the low pressure cilinder.

The.

4.4 the effective sweep volume in m cube / cycle volumetric efficiency,the swept volume,the clearence volume and the cylinder volume in m cube cycle for the intermediate cylinder.

Questions 5.

An engine operating on ideal constant volume cycle uses air as the working fluid the initial pressure and temperature are 105kpa and 77 degree Celsius respectively.the

The volumetric compression ratio is 7,179:1

The network transfer during g the cycle is 551,424kj/kg of air.

Take gamma for air as 1,4 and CV as 0,718kj/kg of air take gamma for air as 1,4 an CV as 0,718kj/kg.k

Calculate the following

5.1 the missing pressure in kpa and missing absolute temperature at the principal point of the cycle.

5.2 the heat received in KJ/kg of air,the heat rejected in KJ/kg of air and the air standard efficiency..

Questions 6.

The boiler plant consists of economiser absorbs 8,256% of the heat supplies a the fuel,an evaporator and a superheater.the supeheter absorbed 2586,02kj heat per kg of fuel burner

The overall thermal efficiency of the plant is 82,56%>

The plant procedure 8170kg of steam npwe hour at a pressure of 2550 KP and a team temperature of 301 degree from 950 kg of fuel burner per hour.

The calorific value of the fuel is 30 MJ/ kg.

The specific heat capacity of the superheated steam is 2,75 KJ/kg.k

The moisture in the flue gases carried 1575 KJ of heat per kg of fuel away through chimney

The heat carried away by using steam table only..

6.1. 6.1.1 the specific enthalpy of steam procedure.

6.1.2 the specific enthalpy of the feed water entering the economiser

6.1.3 the specific enthalpy of the feed water entering the evaporator

6.2.1 the dryness factor of the steam entering the superheated

6.2.2 the heater absorbed by the evaporator in KJ/kg of fuel

6.3 draw up a heat balance in KJ /kg and a percentage for each component the plant and the heat losses by the flue gases,to determine the percentage heat loss unaccounted for.

Questions 7.

A vapour compression refrigerator plant uses 0,5 kg of carbon dioxide per second a refrigerator the plan operated between pressure limits of 3128 kpa and 6748 kpa the refrigerant is dry saturated vapour at the compressor inlet and at the inlet to the condenser it has a temperature of 65degree Celcius

The specific heat capacity of the superheated refrigerant is 2,18kj/kg k

The Saturated liquid refrigerant leave the condenser at temperature of 22 degree

The speciyheat capacity of the liquid refrigerant is 4,12 KJ/kg.

The specific volume of the satured refrigerator at compressor inlet is 0,012meter cube per kilogram

The stroke length of the compressor is 1,2 times the piston diameter.

The volumetric efficiency of the compressor is 92,1%. And it's rotational frequency 240 r/Min

The following are extracts from carbon dioxide table

Saturation temperature celci degree/ pressure// specific enthalpy (KJ/kg)

_4// 3128 kpa//liquid (hf) 74,3. 172,3// vapour 320 //269.

Calculate the following.

7.1 the specific enthalpy of the refrigerant after isentropic compression and the power requirements in kW to drive the compressor.

7.2 the mass of refrigerator in kg /cycle, the volume of the refrigerant in m cube per cycle the swept volume of the compressor in m cube cycle the diameter of the piston in mmm and the length of the stroke in mm

7.3 the specific enthalpy of the refrigerant at the condenser outlet,the refrigerant effect in KJ / s and the actual coefficient of performance.

Total 100

Scaling

Higher education training

Department: high education and republic of South Africa

National certificate mathematics n6.

Time 3h00:

Questions 1.

1.1 given: z=ln(√x+√y)

Prove that. Derived partial √x +. √y. =1/√x+√y

1.2 the radius (r) of a right circular cylinder increase from 4 cm to,4,1 cm and it height (h) increases from 20 cm to 20,5cm

V=πr.r.h

Questions 2

Determine .into ydx if :

2.1 y=1/(x+3)×(x+3)-8x

2.2 y= ln 2xlnx

2.3 y=1/1+tan.tan x/tan.tan.tan x

2.4 y=sin.sin.sin +cos.cos.cosx.

2.5 y=3tan exp -1x/3..

Questions 3.

Use partial fraction to calculate the following integrals:

3.1 int x +5-5x/6x.x+x-1 DX

3.2 int 2x.x.x +6x.x -12/x(x+3)(xx+3x+4) DX

Questions 4.

4.1 determine the particular solutions of

DX/dy-3y=2x. At (1;0)

4.2 determine the particular solutions of

dy.y/DX.x-6dy/DX+9y=18exp-3. When y=1;x=o and Dy)DX =2; x=0..

Questions 5.

5.1. 5.1.1. Sketch the graph of y=2lnx and y=2x..show the area bounded by the graph, the x-axis and the line y=2.show the representative strip that you will use to calculate the area..

5.1.2 calculate the area described in question

5.1.3 calculate the area moment about the y -axis as well as the x co ordinator the centroid of the are described.

5.2...5.2.1. Sketch the graph of y=tanx for o<x<π/2.the area enclosed by the graph, the x axis and the line x=π/4 rotates about the x-axis.shoe the area and the representative strip that you will use to calculate the volume.

5.2.3 calculate the moment of inertia about the z-axis of solid obtained when the area in questions5..

5.3 5.3.1. Sketch the graph of y=e

exp-2

Show the area bounded by the graph, the x axis,the y axis and the line x=2 show the representative strip that you will use to calculate area and the second moment of area.

5.3.2 calculate the area described

5.3.3 calculate the second moment of area about the y axis of the area described inn questions5

5.4. 5.4.1 a triangle plate of side 5m ,5m and 6 m is place vertically in a canal which is 5 m deep.the longest side of the plate is horizontal and is 1m below the water level.

Sketch the relation between the variable x and y.

5.4.2 calculate the second moment of area the plate about the water level as well the depth of centre of pressure on the plates if the area moment is given as numerically equal to 28 m cube..

Questions 6.

6.1 determine the length of the curve

y=9-x.x from x=0 to x=3

6.2 calculate the surface area heated when the curve x=y.y.y for 0<= y<= is rotated about the y-axis..

Total: 100

High education and training,st peace college

Republic of South Africa

National certificate

Engineering physics n6., NQF

Time:3hours

Marks:100

Instruction and informaton

1.answer all the questions.

2.read all the questions carefully.

3.number the answers according to numbering system used in this question paper.

4.keep subsection of questions together.

5.all calculate should consist of least the three steps:

5.1 the formula used or the manipulation therefore

5.2 substitution of the given date in the formula.

5.3 the answer with the correct si unit

6.the constant value,as they appear on the attachment informaton sheet, must be used were ever possible.

.7 use g=9,8m/s square.

8 drawing instrument must be used for all drawing / diagram.drawing diagram must be fully labelled.

9.. answer must be rounded off to three decimal place.

10.rule off completion of each question.

11.writw neatly and legible.

. Questions1. Sound

1.1 explain wath you understand with the following concept as applicable to standing wave node and antibodies.

1.2 determine the longest and shortest length of a church organ pipes.which are open at both end ,of which the Freq is between 68 to 2095hz.

The speed of sound in air is 345m/s

Determine the following

1.5.1 the frequency heard by the pedestrian standing at the crossing while the car is approaching him /her at a speed of 55km/h.

1.5.2 the frequency heard by the pedestrian if he she run after the him her

1.5.3 the frequency heard by the pedestrian if he /she runs the car at speed of 6m/s

1.6 A test was conducted in a laboratory on a Kunst dust tube an aluminium rid with a length of 0,7m and which was clamped at its mid -point is set in longitudinal oscillation the distance between the dusts heaps in the tube is 85mm.

Determine the following if the speed of sound in air is 345m/s

1.6.1the velocity of sound in the rod.

1.6.2 the frequency of the note emitted by the rid.

1.7 A capitain standing on on anchored boat observed that the boat has risen and fall through a total range of 2,5 metres once every 4 seconds as waves with bcrest that are 32 Meyers apart pass.determine the following:

1.7. 1 the frequency of the waves.

1.7.1 the velocity of the waves

1.7.3the amplitude of the waves

1.8 piano player attached the piano strings to one end of a turning fork and it is vibrating with a frequency of 260 Hz the length of string is 80cm and it's mass is 120 grams

Determine the following

1.8.1 the wavelength savewa yranoitats egth

1.8.2..the the velocity v of the stationary wave s

1.8.3 the tension applied to the string that will cause it to vibrate in 4segments

QUESTIONS 2; thermodynamics and steam

2.1 explain the difference between an isothermal change and an adiabatic change of a gas.

2.2 define the second low of thermodynamics.

2.3 Kevin power station develops 600mw of power with 35percentage efficiency.the exhaust heath is exposed into a river with an average outlet flow of 35kg/s used the specific capacity of water =.

2.4 wath is the relation between the efficiency of a Carnot cycle and the maximum and minimum

temperature of the process .

2.5 Carnot wath is meant by the triple point of substance.

2.7 one and half kilograms of gas with an initial temperature of 23 Celcius degree and a pressure of 180kpa is compressed adiabatically to a pressure of 1200 kpa.uae CP as 861 j/kg Celcius CV as 615 j/kg Celcius

Calculate the work done during the compression

2.8 during an experiment the following data was use.ice cube with a temperature of -8celcuis and a total mass of 55 grams are placed in a 330 gram cup of tea 82 Celcius use the heat capacity of tea as the same as water and determine the final equilibrium temperature of substance..Use the following data in the calculation.the specific latent heat of fusion of ice is equal to 333 KJ/kg and the specific heat capacity of ice is equal to 2,089 KJ/kg.k

Questions 3: electrostatics

3.1 calculate the electric field strength in air midway between two point charges of +20x10 -exp8 c and -5x10 -exp separate by a distance of 19 cm.

Hint : using k as 9x19 NM square / coulomb

3.2 A parallel -plate capacitor is made with seven metal plates and separated by sheet of Nica having a thickness of 0,3mm and relative permeability of 6. The area one side of each plate is 500 cm exp 2..

Calculate the capacitance in microfarad.using the permittivity of free space as 8,85x10 - exp12

3.3 determine the energy stored in the capacitor when a 1,2 if television set capacitor is subjected to a 3000 v potential difference across bits terminal.

3.4 A gate motor battery of 12volt is charge at rate 15 coulomb per second

Calculate the following:

3.4.1 the amount of power need to charge the battery.

3.4.2 the amount of energy that is stored in the battery if it is charged for one hour..

Questions 4: Atom physics (charge + e)!an electron (charge - e) that are 5,3x10-expo 11 m part.. calculate the attraction force between them..

4.2 the photoelectric effect litgh directed at the surface of certain metal cause electron to be emitted. In the case of potassium, 2eV of work must be done to remove an electron from the surface.

Calculate the following:

4.2.1 if light of wavelength 5x10 .10- exp7 m falls on a potassium surface, calculate the maximum energy of the photoelectrons that emerged.

4.2.2 if light of wavelength 4x10 exp _7m falls on the same surface, calculate whether the

photoelectrons will have more less energy. Use :. 1ev as1,6x10 exp -19 joule

Take : e=1,6x10 exp -19 c and Planck 's constant =6,63x10 exp - 34 j.s

4.3 calculate the kinetics energy in ev of electron with a velocity of 10 exp 7 m/s take the mass of mass of an electron equal to 9,1x10 exp -31 kg

4.4 why should the neutron be an effective projective for penetration the nucleus of an atom.

4.5 completed the following sentence by filling in the missing word writing on the world.

Next to question ,4.5.1 4.55

4.5.1 gamma rays are electromagnetic wave of exactly the same type ASX - rays,and differ from x rays only in

4.5.2 by magnetic deflection the beta practice were shown to be..

4.5.3 alpha particles have charge of +2 electron unit.and mass of.

4.5.4 in 1899 Rutherford found that a type radioaction was stopped or absorbed by a thin alliminuim sheet of 0,002 cm this radiation he called..

4.5.5 Rutherford also found that another particle required a few millimetres of alliminuim to be stopped or absorbed.this radiation he called.

4.6 when a metal is heated, electrons are ejected.

4.6.1 wath name is give to this phenomenon.

4.6.2 briefly explain why electron are ejected.

4.6.3 explain why ejected electrons would return to hot metal..

4.7 wath is the relationship between the energy of photos and it's frequency.

4.8 what is meant by threshold frequency when referring to the photo electric effect

Total : 100

Scaling total .

Defense total

Presentation foundation

Formula

High education and training

Departments

Republic of South Africa

National certificate

Industrial electronics n6

Time:3hours

MARKS:100

Instruction and informaton

1.answer all the questions.

2.read all the questions carefully.

3.number the answers according to the number system used in question papper

4.write neatly and legibly.

Questions 1: transients

1.1 the following components are assembled for an experiment on current decay in an R-l-c

A variable resistance of unknown value

A capacitor of 22,75uf

An inductor of 32,25 my

If critical damping is employed for this experiment, calculate the value of the nature frequency (fn) of oscilloscation of the wave train that would be produced on the display of the test instrument used for this

1.2 name the two damping methods that could also be used to conduct the experimental in the question.1.1

Questions 2: transducer

2.1 give the standard current range value that must be used for signal conditioning.

2.2 in a face brick manufacture factory the temperature of a thermally insulated chamber ranges from 155 degree Celsius to 555 degree celsius.a thermocouple Wich measure 1,55 MV per 10 degree Celsius on the output of an op-Amp multiplier circuit is used to interface with a standard signal rang of 1 v to 5 v for a metering resistor value 1,55k ohm calculate the value the suitable feedback resistor that is connected to the op-Amp..

Questions:3 ultrasonic,x ray and radio activity.

3.1 ultrasonic energy is generated through wave that have short wavelength.

State two characteristics features of ultrasonic energy as resultat of the short wavelength.

3.2 when employing ultrasonic machine processes to machine hard and brittle material,it is the cutting fluid and the cutting tools that doesn't the actual cutting.

3.2.1 give another name for the cutting fluid that is used for ultrasonic machining process.

3.2.2 state four function of the cutting fluid used during the ultrasonic machine processes.

3.3state the main advantage for not generating external heat when employing ultrasonic welding techniques.

3.4 A photomultiplier tube has a cathode sensitivity of 45uA per lumen and consist of state each with an emission factors of7..if the maximum safe .

Calculate the following:

3.4.1. The amplication

3.4.2 the tube sensitivity

3.4.3 the maximum safe illumination

3.5 name three factors that determine the sensitivity of photomultiplier

Questions 4: Automatic inspection, testing and NDT

4.1 inspection of articles form an integral part in any manufacture process.

4.1.1 give one main reason for the need to carry out the inspection process on manufactured articles..

4.1.2 name the two group into which inspection, testing, sorting and Harding device are divided..

4.1.3. Destinguish, in terms of yielded results , between the two inspection system in question 4.12

4.2 non destructive testing is a method used for testing items for defects which are not visible to the human eye.this can be achieved through the use of x-ray tubes.

Name the three methods commonly use for non -destructive testing through the use ofx ray tubes.

Questions 5: electronics safety device and electronic power control.

5.1 industry,safe operation of machine is dependent upon acute designing and connection of electronic safety device to the industry machine

Distinguish with respect to connections technique.three main difference between positive protection and negative protection...

5.2 briefly define the term intrinsic safety,as applicable to the workplace safety environment

5.3 closed -loop control system are divided into two main groups..name and described the two groups into two which close loop system are divided..

5.4 the development of a CAD system can be broken down into a number of development stage..draw a labelled block diagram to show these stages..

Questions 6: thyristor device and scr speed control.

6.1 A simple thyristor half wave rectifier circuit which uses an act and a resistive load,operates on the following data:

.Vsupply=240 Varma

.Rl=unknown value

. thyristor (scr) current=15A

Calculate the following:

6.1.1 the mean load voltage for 0degre Celcius and night degre90.

6.1.2 the maximum thyristor voltage

6.1.3 the RMS value of the current flowing through the thyristor..

6.2 state six advages of direct current motor speed control.

Questions 7: programmable logic controllers..

7.1 A typical PLC consists of three basic section,namely,a programmer.programmable controller and explain expension unit

Dream a complete fully labels block diagram of a programmable controller unit of a PLC .

7.2define the following term Asin the study of PLC s

7.2.1 edit.

7.2.2. Elements

7.2.3.rung

7.2.4 timer

7.3 dream albelled ladder diagram of Anand function using two input contacts..

Total 100

Scale Rating

Defense factory..

Department of higher education and, st peace college

training Republic of South Africa national certificate. Electrotech n6.

Time :3hours

Mark:100

Instruction and informaton

1.answer all the questions

2.read all the questions carefully

3.number the answers according to the number system used ithis questions5

4.round off all calculation to three decimal place

5.use the correct symbol

6.start each question on new page.

7.keep subsection of questions together.

8.all circuit diagram and vector diagram must be least on third of page and must be fully labelled.

Questions 1.

1.1 dream and explain the operation of a ward -leonard control system, controlling the speed and direction of a large DC shunt motor.

1.2 A 250v,DC series motor runs 1000r/Min while drwawing a current of 40 ampere from the supply the resistance of the armature and series field are 0,250hm the supply.the resistance of the armature and series field are 0,25 ohm and 0,1 ohms respectively.

1.3draw two fully labelled circuit diagram used to solve

Questions 1.2clearly the current flow in both diagrams.

Questions 2

An alternating voltage represented by the expression,v=30sin(314t+25)+10sin(942t-30) is applied to a resistor of 180ohm in parallel with a capacity 25 micro farads.

2.1 an expression for the instantaneous value of current.

2.2 the power factor of the circuit (state the nature of the power factor

2.3 the energy dissipation in the circuit in 10 Milli second

2.4 dream a large vector diagram clearly showing the voltage and current for the fundamental as well as the harmonic components.

Questions 3.

3.1 state two constant losses occurrence in a transformer and state precisely where each occurs

3.2 A 250 KVA ,3300/240 v single phase transformer produces a maximum efficiency of 92% at 80% of full load

Calculate for a power factor 0,85 lagging:

3.2.1 the iron losses

3.2.2 the full -load copper losses

3.2.3 the percentage resistance

3.2.4 the per unit full load voltage regulation of the transformer when it works at unity power factor

Questions 4

4.1 what do you understand by the distribution factor of a synchronous alternators.

4.2 the following information applies to a three -phase,star -connected altnator:

Open circuit terminal EMF=3,3kv

Frequency=50hz

Speed=1000r/Min

Number of slots/pole/phase=4

Coil span=150

Useful flux per pole =55 mill Weber's

Calculate the possi number of conduct per slot

Questions 5.

A 380v, 50hz, three-phase, stat-connected synchronous motor has an induced EMF of 500 volts.the synchronous impedance of . The motor is (1,5+j4,8) ohm per phase. For a load angle of 25 degree electrical calculate.

5.1 the current drawn by the motor

5.2 the power output of the motor ifs efficiency 85%

.5.3 dream a full labelled vector diagram that you would use to solve this example.

Questions 6.

A 525v, 6 pole,50hz three phase delta connection induction motors developed 28kw when running at speed of 950r/Min .the rotor iron loads is negligible and the frictional loss in the bearing is 800watts.for a power factor of 0,8 lagging, calculate.

6.1 the percentage slip at which the Motor is operating.

6.2 the rotor copper losses

6.3 the power input to the motor if the total losses occurrence in the stator amount s to 1080 watts.

6.4 the current drawn from the supply

6.5 the efficiency of the motor

Questions 7

A large industrial consumer takes 1 MVA at a power factor.to reduce maximum demand,a capacitor bank was installed and the overall power factor was improved to 0,9 lagging.

Determine

7.1 the sizes of the capacitor bank

7.2 the cost of the capacitor bank if it sells for R295 per kvA

7.3 how many months it will take to pay off the capacitor bank using only the saving s in maximum demand charge ? Assume that the consumer pays a maximum demand charge of R132per kvA..

7.4 drawa neat fully labelled vector diagram clearly showing the maximum demand before and the installation of the capacitor bank .

Total 100

.

Criteria outcome Min max

Achieve.

Defense factor explain.

Test orthographic projection

Assessment police tools control circuit

Test framework regulatority mandate low.skill admnise communication test communication strees .manage system information test info recruitment system activity over stocks test simulation control circuit phase crime analyse source data ..humain induction management system planning test orientation careers.. theory crime incidence evidence test ..crime investigation principle evidence trial test

Paralegal Deb financial test, delivery test assessment activities .file system indicator system ph draug analyse adn..finger print digital relation identify test examin correlation test relation map felonies detection....fire arm study material, health pathology forensics test test examin size mass. Centrifugal microscope blood test.body scamming system file .it dabase..

Test performance police training test Poe evidence values..

Check.procedure check calibration operationa explanation material conduct insulation magnetic Armie conductor low.

AC.rc current installation check panels check. Calibration operational current formula low.

Resistivity conductive aupra conductivity impedance.z. 1/z,1/r resonance test instrument class value correct instrument model AC DC characteristics operational efficiency correct../

Entry assessment credit module completion.. value engineering

Outcome exhibition assessment process control technologies.

Instrument method measure screening outcome compulsory.component engineering electrical subject meet award original meet certificate registered extra circulum .

Operational task module entry criteria ward . transcript.. operational,

..

1. Tools assessment .mark Check

Measure installation.

voltage voltmeter.amperemeter,watermetet,voltmeter etalon kWh cosmeter care meter ohmeter...calibration check material checking conductivity, insulator.magnetics., resistance check field magnetic flux meter light ..cell densimeyer checking..

Power factor maximum demand check .

2. Tools assessment. Mark check system fundamental assignment.

trade theory electrical switches control test way control insulation average installation way minimum maximum value RMS value nominal maximum circuit breaker way .Relay delay timer fuse maximum value rating trading db box maximum value..inom.imax switch circuit way .bulb lighting trade minimum cost value . metering cost value.. installation specifications material trade power supply.minim.balance equilibrium circuit, ligne transformation value trade motor load AC DC current value current.line 1,2,3. Compliance safety security trade required operational miniu time operational network.prevention health first aid, components

3.tools assessment. ,

test operational AC ,DC, motor AC,DC, generated, method,, verification transformation test insulation auto transformation test. Measure transformation measurements power factorise, transformation start Delta test measure, Relay current ,rating .AC DC motor test insulation characteristics power torque relever machine ban control test . Hopkinson breaker rating,. Methods earth.machinery current test trade month cooling test breaking value measure instrument loading test average value RMS .

4.tools assessment check

test operational transmission overall.overload system transmission generation plant power test ,insulation test safety security

Inspection circuit breaker circuit gear .. inspection transmission insulator support network test arena radial test cabling distance effect network.

Control dispatch distribution system distribution load,

Fundamental system control . Low

Line current phase curent

5.tools assessment module criteria

Test semie conductor .diode rectifier full halph light photos food test value current peak.test evaluation characteristics specific.soldering resistor capacitor active passive elements manufacture test criteria..test transistor phototransistor circuit transistor value load efficiency.tyristor disc triac silicon integration circuit operational transistor test multimeter amperage voltage bias relever.. Kirchoff low,step . detection transducer motor DC AC magnetic measure . oscilloscope digital PC test value alternative.. regulatory test ..logic diagram register process electronic key lock timer summer test ,.

6.tools assessment circular

Engineering science static analyse specific load experimental control kinematic level doped velocity distance initial..test odometer calibration bank test panel car..power test material strength. Momentum test level turning test dynamometric key ..

Fulcrum pulled test pandil .test rather . electricity low test electro test..heater colorimetric test specific test break energy kinetic friction . Min max load

Test hydraulic ..pressosta thermometer. Conductivity heater test

.. Engineering physic. Test gyroscope. Test top. Test. Force attractive repulsive test diffusion

Power machine test steam machine compressor heater test .tr/Min

7. Mathematics tools assessment gradient.. algebraic geometry statistics equation, test angular . trigonometric test

8.Engineering drawings .

Orthographic projection construction cut view, assembly,

Test ligne dream project rerojection tools rules synoptic test scenarios tools..

Control assessment panel didactic tools. Orthopedagogic planning lecon project board,

On Sat, 20 Aug 2022, 17:23 TSHINGOMBEKB TSHITADI, <tshingombekb@gmail.com> wrote:

1..register saqa admin .national framework regulatority qualifications . instituts foreigners

Credit subject entry .nqf1.12..

Award diplomat work day certificate.1th,.2.th.,3th,,4th level

I'd number submitted.. record

Academic transcript learner student lecturer..

N national certificate diplomat.

Credit equivalent entry evidence explain

50%..50/100..equivalent. award minimum. meeting

Name surname credit acredit minimum

I'd/name/years qualifications//provision//.

1.register national examination ,

N diplomat. Examination n 1.n6 diplomat t1.

I'd /name /years///file student/submitted document file///

Courses attandance////exam attended

I'd number registered.regulier diploma n

18month.attandance.term 1.term2.term.3week

Level1.2.3 minimum engineering electrical learning national trade

Registered.. regulier/

I'd number candidate.//.I'd regulier.//

I'd name///class level///file number//submitted number ///documents attached

National

N1.n3..rwiten final engineering

N1,N2, council test trade .

Councils education..

I'd number candidate irregularity register

Reg .I'd number submitted.

Rectorat college director principal

System

College internal registered. St peace

And institutor ..distance university

.grade..1..12... level 1.2.63.4.5.6

Under graduat .1.2.3.4

Learner

Teacher

Lecture

Professional

Subject faculty admnise

Regularity .. irregularity ruling

I'd name . Term 1.2.3.4.5.6.7.8.9.semester1,2

Report internal diploma.certificate award . internal statement internal report . homework classwork test .exam internal sylabus hand book campus module practice.

Assessment assignment homework practice theory skill give to student to prove if student at home classes on completion is capable to resolve trade theory Test is capable to working by self group peer

Module correct diagnostic

Manufacture maintenance testify attest award brevet certificate is true

Recording examination.diplomatic to council of test function working yes and to evaluate grade level n it test comming rather working nice.

T

Test circuit.nice erroneous value home.

Test operational

Commission.

1.homework class work exercise books topics research on line Poe exercise book.//capacity to make reproduct analyse rwiten.///criteria minimum requirements 100

2.test evaluation module topics test research Poe's /functional school academic task system function.///

3.examination evaluation diagnostic module external internal /low competency year term weekend rating period achieve rerwite.

Remark.////

Skill engineering

Criteria meet award low saqa questions5 interpretation

Operational control

Good

..

Designing... workplace workshop..

On Sun, 14 Aug 2022, 08:32 TSHINGOMBEKB TSHITADI, <tshingombekb@gmail.com> wrote:

Department high education and training

Republic of South Africa

National certificate

. examination electrotech

. Time .

Marking guidelines consist 12page

Chief marker

Internal moderator

MC

Concession

Reduce marks for questions 7.2 by 6 marks

Mark all candy out of total 94 marks

Convert the mark achieve out 94mark

Record the percentage achieve on the market sheet

Total 10

Questions 1 DC machines explain

1.

Questions 2 AC circuit theory

Explain three phase circuit..

Questions 3. Transformer

3.1explain

Questions 4. AC machine alternator..

Questions5.. AC machine synchronous motor.

Questions AC machine induction motorsQuestions 7.generation and distribution of AC

National certificate examination

Mathematics n6./ Level 6/ .nqf 6. ...

Time 3hours.

Marks:100

Instruction and the questions.

2.read all the questions carefully.number according used.

Questions.1.

1.1 given z=1/cos.cos.cos (5x+2y)

Determine minimum..

Partial z/partial /x gradient . Variation differential.

1.2 given x=1+2t and y=3/1+2t..

Determine

1.2.1. Dy/DX.

1.2.2 d.dy/d.x x

Questions 2

Determine integral ydx if

2.1 y=e exp- 3x cos 3.x

2.2 y=-e-6x

2.3. y=tan.tan.tan.tan.4x..

2.5 y=ln(1/x)

Questions 3.

Use partial fraction to calculate the following integrals.

3.1 integral. x.x.x +2x.x-4x-11/(x+3)(x-1).dx

3.2 integr 6x.x -4x+10/x.x (x.x+2).dx.

Questions 4.

4.1 determine the particular solutions of x Dy/dx-2y= x.x.x. cos x at (2;1)

4.2 determine the general solutions of d.dy/dx.x -dy/dx-2y=e exp 2x

Questions 5

5.1 ....5.1.1 determine the points of intersection of the graphs of y = y=2x and 2-1/2x.

Sketch the graph and show the area bounded by the graph of and the axis

Show the representatibe strip / rment you will use to calculate the area.

5.13 calculate the area described in question .

5.1.4 calculate the area moment about the y acid as well the dosty from y acid of then centroid of the area in .

5.3 sketch the graphy of x.x+y.y=49.

Show the area in the first quadrant bounded by the graph ,the line y=2,y{ 5 and the y =2,y=,5 and the u axiy show the representative strip you will use to calculate the volume when the area is rotated about the y - axis.

5.2.3 calculate the volume generated when the area described in question .5.2.1 rotated about the y - axis.

5.2.3 calculate the distance from x axis of the centre f graviy of the solid.of obtain when the area in question.rotate about the y - axis

5.3 5.3.2 sketch the of y= cosx and for 0<x< π/2

Show the area bounded by the graphs and y- axis.show the representative strip you will to calculater the area.

5.3.2 calculate the area described in question

5.3.3 calculate the second moment of area about y -axis pfarea description.

5.4.1 the cross section of water tank is the form of trapezium the bottom the tank in .4m wide the top is 4 m wide and the height of the tank is 4 the.tank is full of water sketch the cross secty the tank and show the representative strip you use to calculate the area moment.veryi Al ed the tank.

Calculate the relation between the variable x and y

5.4.2 calculate the area moment of a vertical end of tank about the water level

5.4.3 calculate the depth of centre of pressure on the vertical end of the tank if the second moment of area is given as 69,333 M3

Questions 6

6.1 calculate the length of the curvr

y=x.x.x./4+1/3x from x=to x=4

6.2 calculate the surface area generated when the curve c=y-9 for <y is rotated about the x axis

Total 10

Department of higher education and training

Republic of South Africa, ..St peace college

Non national certificate installations rules second papper

time

:3hours .marks 1000.

1. Answer all the questions

2.read all the questions carefully.

3. Number the questions according number.

Even though explicit started in question.all the questions carefully.

Number..sabs dan.aswr word perfect .

7. Candidate muster pass papper 1 and papper 2.with 50% each.both examination rwite. During the same exam period must be pass 12 month auther wise re rwite.. statement of resul issue for accreditation purpose statement of results will be issued candidate meet prescription of the labour .use pen black.

Questions 1. Sans 10114-1 2017 installation requirements current carrying capacity of conductor and cables. Six cables of the dames size installed on metre deep in a trench that has an average soil temperature of 30 c each cable a sustain current carrying capacity of 66.52A.and thermally resistivity of the soil is 0,9 km/w there is not space between cables.

1.1Calculate the standard rating of each 1.2.cable installed in pipes and buried in the ground.

Questions 2; sans 19142-1 of 2017 installation requirements installation of conductor and cables .

3.1 wath are the indentification for a conductor.

2.2 state eight instance where PVC insulated multicore cable with a bare Earth conduct and cable with metal stiffening may be used .

Questions 3. Sans 10152-1 of 2017 installation requirements: distribution boards.

Briefly explain the requirements regarding warning label that shall be fitted to all distribution board.

Questions 4

Sans 10142-1 of 2017 verification and certificate prospect short circuit current.

4.1 give the formula to calculate the source transformer and explain each item formula.

4.2 calculate the estimated length of 70mmx4core aluminium cable with an impedance of 0,0263 0hms

Questions 5 sans10142-1 of verification and certification testing.

. Briefly explain how following test can be performed:

5.1 continuity of bonding.

5.2 resistance of the earth continuity conductor.

5.3 voltage. Available load (worst conditions)

Questions 6: sans 10142-1 verification and certificate test reports..

6.1 state three test reports applicable to this of sans.

6.2 name four of the five type of electricity supply system mention in section 2.(Installation of the test report typical of electricity supply system mention in section installation of the test report.

6.3 state five electrical test that can be performed at the distribution board . with supply available and can only be performed using a test.instrument.

Questions 7 sans10142-1 of 2017. Installation component. Install fixed electrical installation .

Questions 8. Sans 10142-1 of 2017. Calculation of voltage drop.

Calculate the following from the diagram.

8.1 the estimated cable size between the transformer and the db.the no load voltage measure at the db is 225v.

8.2 the maximum distance allowed between the db and the pump.

Transformer 11kv/230v 0.9pf signle phase....20 m .. distribution board 80 a 225 v no load ..4mm x3 Coren..pump 1 phase 5kw/230va..

Questions 9. Sans 1014 of annex earthing arrangements and equipotential bonding of information technology installation for functional purpose.

State the conductor that may be contained to the earth busbur of information technology installation.

Question 10:..sans 1973-3 of 2008; safety of assemblies with a rated prospect short circuit current of the up to and including 10 kA: busbar and wiring system ..

True false

10.1 the current density of phase busbar shall not exceed 2,0 A/mm for busbar curent up to and including 630A.

10.2 the sizes and designs of phase busbar shall not exceed that could occurred at the supply terminal of assembly.

10.3 standard colour coding. Red yellow blue or number L1,L.2,L3, shall be used to identify a phase busbar

10.4 green /yellow shall be used for the earthing busbar and black for the neutral busbar.

10.5 if colours is used for control wire coding any colour may be used except green yellow and green black..

10.6 electrical equipment shall be selected in accordance with the used technical and installation knowledge for enclosed assemblies.

10.6 electrical equipment shall be selected in accordance with the user technical and installation knowledge for encode.

10.the power loss lead dissipation capability of the assembly may be exceeded if monitorer.

10.9 the dimensions of the joining plates (fish plate) of the busbar shall be similar to those of busbur and the overlap on each side shall be at least equal to the width of the busbar..

10.10 conductor installed within a fault free zone need not be insulated where they could touch conductive parts..

Installation component stand fixed electrical

..from the point of control to the point of consumption..stove coupler socket wall nice vc switch .isolation transformer.lamp metall firing circuit breaker terminal earth leajagr

Sans10142-1:2017.

Multicore PVC insulated armoire cable sans 1507 voltage drop bbper amper meter aluminium conductor.

Conductor operating temperature 70.

 Conductor cross sectional area.two core d.c.two core cable. MV/a/MB .4,5..r,x.z...////three core or four core cable phase a.c MV/A/m. r,x,z 3.9. ..

In the case of single circuit the return path has been account for the given.

..

Correction factor for soil temperature maximum conduct temperature 70 Celcius.

Soul tempera.correction cable buried directly in pipes in the ground....

Therminal resistivity soil km/w..cable buried directly in ground..cable installed in pipes buried in ground ..the correct factor have been average over range size consult ..cable..Cary curent neutral correspond reduced load phase ..

Unbalance circuit.. harmony.. impedance of 6000/1000

On Sat, 13 Aug 2022, 14:48 TSHINGOMBEKB TSHITADI, <tshingombekb@gmail.com> wrote:

Formal technical INSTRUCTIONS in the ra report 191.. n n3. ..191..

I'd evaluation saqa application 2019113002/20200130540

Formal RSA 191. Assessment task the icass trimester engineering studies .2010002023812/2004007064381/2011007434332.. subject week 2,4//,5,6//8total 2test natural science engineering..

75 78 lecture day general business services lecture.

Analysis grid for all test and must be submitted for Pre assessment moderation..

Subject level learning objectives//questions/formative/short responses /medium response/extend response /mark allocation /Toal mark.multiple choice medium response short explanation description required a couple's of sentences .extere response long explanation required.pre assessment moderate process lecture response settings a test assessment task.pre assessment.. responsibility

time hod.. subject lecture trimester semester manage due.technical criteria content coverage..final approval of the asssessor check layout font submit.. analyse grid.1.2subject aim learner objects are listed.conceptual visual level indicator per questions instruc.spread concept..formal cleared correct check page break spacing criterion content..content lecture subject assessment file item file.class registered subject sylabus work schedule plan work plant pace .plan lesson and teaching resources.

Evidence of additional support task as required improve.munite of subject meeting.does does the assessment file containing,. moderator report.evidence of post assessment moderate handrwite or ... subject.level.program drop total.percentage total plane .. trimester assessment task tool content duration mark moderator submission date Pre assessment.assement date completion date of post moder..

1.Subject. Years.... trimester ..

icass trimester mark sheet..Cass mark task

.final icass mark..test..test convent the mark to weighted /%total 100..

Irregularity..forfeit resultat be suspended from writing exam for 11month..exam adminission permit and examination instructions....

Check.

Task efficiency time management.. standard required.correctly per the standard required.4_5. Required struggle management organisation completed.. correct task standard.

Task criteria possible weight area..

Evaluation is conducted continuously means two formal test college test mark 40bfinal exam electrotech engineering

Knowledge and understanding., applying, analysis synthesis and evaluation. Rwiten

Final revised time table Engineering studies examination 2020..

N1..n4 electrotech industrial n1...

:

Statement of work experience . program code. Electrical engineering saqa.. qualifications I'd :90643 national n diplomat.engineering studie electrical n diplomat engineering.

NQF level 6,360. Learner details.

Company name ..St peace college

..interpre dream look for evidence job requirements.check.folow.

2.mesire for checking wiring and circuit

Installation and circuit up1000v AC preparing work on accordance legislation required operational procedures and hazard and safety requirements.opetating procedure work using instrument measure.check material.for conform process.selection,

Cable installation cable .wire system and enclosed support system.marking labelled testing wiring.completing report and documents shortly comment and terminology..

Engineering diploma electrical sub electronics record and verified relevant circuit assembly electronics schematic.

Tagg.testing checking modified

Entering routine informaton vpro forma.mainyen repaired control system .diplomat.look for evidence confirm skill.check operational control device signal obtained.interpre.relevent planing personal.cpnform control operation response..

Engineering dismantling .disassembling.servicrable item . setting up appropriate test and calibration equipment settings..

Test skill knowledge dream statutory electrical wiring support and protection.requirement terminal.televany . manufacture.conductor connection.conection report

.select transmission final control.indtsll.loval installation.

Side cutter

Sed for cutting or tmming of connecting wire terminal lead in circuit components or terminal lead in the circuit board long nose plus.sed.

Holding bending and stretching the lead electronic.soldering pencil.use to joint two or more metal conductor with the support soldering.sed join two more metal conductor with the support.

Very satisfactory performance

Satisfactory performance

Fairly performance..

Technical electrical officer

Band minimum

Could you created the latest crime figthi g technology.

Skill computer problem.corr function

Management all electrical aspects of construction project include documents in inspection . compilation specifications saps use

.

Working line support and fault analysis in laboratory or I'm field a long side operational colleagues and officer.

Practices technology.

General electronic.ambedded system including hardware and software

Knowledge of audio communication and RF.

Schematic capture PCB.scjematiic.manufacyure technical.

Qualifications.hnc/hand electronic electrical engineering systems development..

Department of higher education and

training republic of South Africa, ..St peace college

National certificate

Control systems n6

Time 3hours

Mark 100

1.answer all the questions.

2.read all the questions carefully

3.number the answers according to the numbering system used in this paper

4.insert competed three semloharithmic grph papper ofbodr plot into the answers book before handing

5.write neatly and legii

Questions 1.

Explanation control action is independent on the output

1.2 slow variation of the output voltage or current of the amplifier whey the input signal is mainyenef at a constant level

1.3 response tends to overshoot the goal with oscillation decaying very slowly or not at all.

1.4 time take response to complete one full cycle.

15.

Condition brought about when two complementary energy strong components of a dusty procedure a oscillator between them

16.frequency produced when two comp energy -storing component of systems produced an oscillator between them.

1.7 sum of the transient response and the steady state response of a linear constant different equation

1.8 system where the output has an effect on Ty input to.maintain the outputs at a desired value.

1.9 mathematics equation containing elements of a system system to be transferred from the input to the output assuming all initial conditions to be zero.

1.10..shortland pictorial representation of the cause and effect relationship between the input and output of a system..

A ..

Time period

B. Closed-loop system

C.undamped natural frequency

D.feedback

E.total response

F.transfer function

G.underfamping

H drft

I block diagram

K resonance

K..

Questions dream block dit algebraic reductions,the control ratio of the bloc diagram

Questions 3.

The transfer function of an open loop control system is given as

G(s)H(s)=75/s.s+15s

..

3.1completed it by calculating the log magnitude and phase value for each the missing frequency

W(rad/s)

GaunA(db)

3.3 dream the bode plot for system on a three -cycke semloharithmic grap

Diagrams illustrate a closed loop gain versus phase plot on a Nichols chart

4.1 use the Nichols charter to determine each of the following.

4.1.1 the gain margin

4.1.2 the phase margin

4.1.3 the phase margin .

4.14 the phase crossover frequency

4.15the undamped natural resonance frequency

4.16 the peak frequency response

4.1.7 the peak magnitude and phase

4.1.8 the closed -loop phase

4.2 state whether the system is stable or unstable

Questions 5.

Diagrams illustrate a root locus plot of an open -loop system bas the amplifier gain varie from zero to infinity.

Use the root locus plot to determine each following

5.1 the damping factor () at pointD

5.2 the undamped resonant frequency (en)a point d

5.3. the damped reason frequency (w n).

5.4 the gain constant ko at point D

5.5 the open loop poles

5.6 the frequency at which the system becomes unstable..

Questions 6.

6.1 convert given Laplace transform function to a function of S:.

F(t)=e at.dt

6.2 convert the given Laplace transform function to a function of t

F(s)=21/s(s+3)(s+4)

6.3 the input voltage to a differentor amplifier has an input voltage of 9v with a resistance of John and capabilities of 5uf

6.3drwan neat diagram. Of circuit

Calculate the output voltage of the circuit

Questions 7.

7.1 what is a triac.

7.2..

Questions 8

8.1 dream a neat labelled schematic diagram of a half wave doped control circuit for a separately excited motor.

8.2 give two disadvantages of using electrical power in electrical controller.

..

Questions.

9.1 Listen rotary pumps

9.2 Name type non positive displacement pump

9.3 give six advages of using fluids power

Questions 10.

10.1which type of filter is a c-r differential circuit

10.2 explain the term impedance matching of test equipment in oscilloscope.

10.3 calculate the value of the unknown frequency (fh) for the figures below.

Hint: fh/fv =>>

Fv=500hz.

Power machine

Questions 1.

1.1 name one type of governor

1.2 completed the following sentence by writing only the missing word next to the question number (1.2)

1.3 name two main components of a steam generator plant.

1.4 variouse option give answer the following.

1.4.1 partial pressure of steam can be read from the steam table if the of condenser is know

1.4.2 equiangular blades mean that blade inlet and outlet angles are.

A 90.

B.the same

C.different.

1.4.3 potties of gases a step .

Questions 2

Balloons,

Quest 4 used steam ..

Questions 4.

Question 5

Questions 6

A jet a supplied. ..

Information processing n5.n.6

..guidy marking.

The candidate cannot fail because could not completed or pass the timed accuracy.

Total questions Papp ..pepetive accuracy process errors must indicated red repetitive accurate..

All key.

Method marking.. possible mark .if only 1/4of questions is completed original mark will be used for marking of questions complex originally..

Mark for all the question .row mark diverse by 3..

Questions continued.

Total mark .=50 1/2= accuracy =40

Display=10.. becomes full mark ..

2.computer practice

Database documents the doc save.diagram chart. Show step step. Diagrams the represents an Lgorith.

The boxes are connected by line arrows.can give step problems.

Organisation structure of a company.

Structure not .

Process operational brepresented .

Connecting arrount flow .

3.sectiom basic principles of law .

Section b account.

Commission structure

On Fri, 12 Aug 2022, 14:22 TSHINGOMBEKB TSHITADI, <tshingombekb@gmail.com> wrote:

Department of higher education and republic of South Africa

National certificate, ..St peace college

Fault find and protective device N5

Time 3hours.

Marks:100

INSTRUCTIONS and informaton

1.answer all the questions

2.read all the questions carefully

3 number the answers according to numbering system used in this question paper.

3 . writing neatly and legibly.

Questions 1.

Designi and drawing only the control circuit of the following sequence start:

Press start button -motor A

After 10 second motor b stars after another 10 second Motor a stops..all the coils are 380 v and the timer are set 10 second.

Note : show all the protection and safety equipment.

Questions 3

3.1 name two type of voltmeter commonly.use in practice.

3.2 draw a simple block diagram of a digital voltmeter.

Questions 4.

4.1 make a labelled freehand drawing of the general diagram of feedback amplifier.

4.2 convert the following number to the base show in brackets

4.2.1 48

4.2.2....10111,011

4.2.....8,4375.

Questions 6

6.1 Draw and labels the symbol and consideration of an act.

6.2 draw a labelled vi character curve of an act.

Questions 7

The figures on the diagram sheet attached show that contractor M does not pull in

Questions 8.

8.1 wath is x-y plotter

8.2 state four advantage of the x y plotter

8.3 name four feature of the x -y plotter.

Questions 9

Define the following :

9.1 slip - ring

9.2 primary (of an electrical machines)

9 3 . segment

9.4 stator

9.5 squirrel cage rotors

Questions 10

10.1 explain how dynamic braking..used to decelerated..a direct - current Motor.

10.2 explain why you cannot start a large direct current motor without a starter..

On Fri, 12 Aug 2022, 13:54 TSHINGOMBEKB TSHITADI, <tshingombekb@gmail.com> wrote:

Assessment .integrated concept a what is the cost of heating a hot tube countourning 1500kg of water from 10 degree to 40 degree assuming 75 % efficiency to account for heat transfers the surrounding the. Of electricity is 9 cent kW

Given

.1500x(40-10)=54000

Effb75%. =72000kw

Unreasonable result what current is head to transmit 100x10mw of power

At 480 v..(by transmission line if they have 100 resistance.

What is unreasonable about this resi.

Which assumption are unreasonable...

On Thu, 11 Aug 2022, 21:43 TSHINGOMBEKB TSHITADI, <tshingombekb@gmail.com> wrote:

Department of higher education and training

Republic of South Africa

National certificate

Engineering physics n 5/n/6..

Time 3Hours

Marks 100.

INSTRUCTIONS and informaton

1.answer all the questions

2.rear all the questions carefully

3.keep subsection of questions together.

Questions 1

1.1 description examples of diffusion in:

1.1.1 solids

1.1.2 liquid s

1..1.3 gases.

1.2 a spaceships on its to the moon reaches the point where the moon and the earth exert.bequal force of attraction on it.

calculate how far this point is from the aerth. The distance from the moon to the Arth is 4x10 exp .m

1.3 calculate the osmotic pressure of a sugar solutions that rises 200 mm in the tube of a funnel, when the sugar solutions has a density of 1,5 g/cc.

1.4 the statement below refers to the give diagram showing the menscus of a liquid in a thin glass tube.

Indicate whether the following statement are true or false.choose the andwe write only true. Or false next to the questions number (1.4.1-1.4.3) the andwe book

H

1.4.1cohesion is greater than adhesive .

1.4.2 the liquid in the tube could be mercury (not water)

1.4.3 the angle between the surface of the liquid and the containers is more than 90 degree (alpha more 90 degrees)

Questions 2

2.1 after the pressure on a quantity of gaz was increased adiabatically from 250kpa to 2,1 MPa the volume was 5,8 meter cube heat capacities for the gas is 1,64 calculate the original volume of the

gas

2 .2 A.200 m length of black polythene pipe of 50 mm external diameter is connected to the inlets of a swimming pool pump while the water is circular slow assume that to energy is lost the mass of water in the syy is given as 20000kg the pipe is behind glass and is at a constant temperature of 60 degree celsius.the shines directly . perpendicular on the pipe for 8hour. assume that the sun is only in contact with half the pipe for 8hours. Assume they sun is only in contact .

With half the surface area of the polythene pipe emissivity for black =1.

Calculate the following

2.2.1 the area of the polythene pipe absorbing energy from the sun

2.2.2 the rise in temperature of the water on the system

2.2.3 the energy absorbing by the polythene pipe

2.3 write a paragraph on the conduction of the heat discussing the medium involved and the role molecules player on the process.

2.4explain the meaning of and give the si unit for each symbol in the formula below:

$V=\sqrt{3RoT/M}$

2.5 calculate how much work is performed by a gas which initially has a volume of 0,003 meter and the temperature of which rises from 27degre Celcius to 227degre if the pressure remain a constant at 2x10 pa

2.6 a neon light tubes work from 250 v and drawing a current of 0,48 the tube has surface...area of 0,302 meter square and has a eorki temperature of 50degre celciy.

If e=o,25 calculate the following:

2.6.1 the electrical energy available in watts..

2.6.2 the heat energy loss..

2.6.3 the light energy radiated..

Questions 3

3.1 calculate the magnetic flux density at a point.. at a point when a current of 6 A is flowing through a circular wire..of 30. Cm diameter. P is the centre centre of the circle.

3.2 a transformer has 2400. turn on the secondary side and delivery s 600.v calculate the turn ration (primary secondary if the supply voltage is 220 v.

3.3 a current _ carrying conductor 0,5 m long, moves at 0,2m/s perpendicular to a magnetic field of 4 Tesla (WB/m) the resistance in the conduct is 4 ohm calculate the following:.

3.3.1 the induced EMF.

3.3.2 the current through the conduct.

3.3.3 the force on the conductors.

3.4 description the difference between the construction of a generator and of an alternate.hoe do you distinction between them in term of current.

3.5 completed the following sentence concern the construction of a galvanometer using any of the following suggestions material.in the list below.

Copper,soft iron.nulon.aluminium

3.5.1 the moving coil made of fine wire.

3.5.2 the coil is wound around a cote..

3.5.3 the framework, within which the coil is held, is made of

Questions 4.

4.1 .4.1.1 wath is the processing called when molecules diffuse through a sermipermeable.membrane

4.1.2 described a appropriate example of the process in question.

4.2 an iron ball of diameter 16 cm and a mass of 14kg is suspended 3m from the floor by an iron wire iron wire of outstretched length of 2,8m the diameter of the wire is o,9 mm if the ball is set swinging a downward force of 260n is exerted by the the ballast it's lowest point by how much does it clear the floor ? Young module for iron =1,86x10 pa

4.3 an Observer at the blood donor service notice that blood rises 6,8mm on a tube with a 1 mm diameter

Calculate the density of blood if the surfaces tension is given as 0,02 n/m and contact angle is 5 degree

4.4 ammonia had a molecular mass of 7 kg / mol and diffuse at a rate of 0,222l/Min

Calculate the rate of diffusion of carbon monoxide gas with a molecular mass of 28kg/mol

4.5. write short notes on

4.5.1 adhesion

4.5.2 cohesion

4.5.3 viscosity

Total 100.

. explanation.

Marks100.

Compare

Scale 100x2/2

Explanation fundamental core value mark.

Weghting fundamental demonstration knowledge analysis aynthes mark point

Formula sheet value .

Defense purpose value factory development system.

Assessment police circular reasoning

Statement.

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Industrial electronics n5.n6.

Marks:100

INSTRUCTIONS and informaton.

1.answer all the questions.

2.read all the questions carefully

3.number the answers correctly according to numbering system used in this question papper.

4.keep questions and subsection of questions together.

5.all the sketches at diagrams must be large .clear and neat.

6.show all the steps and calculations.

7.write neatly and legibly.

Questions: alternating current theory

1.1 draw the circuit diagram of a RC-coupling and show typical inputs -and output waveform of the circuit.

1.2 low and high frequency disturbance can be observed from different level of a square test waveform. Different level of square test waveform.

Show the level involved by means of a neat sketch.

1.3 in a parallel Rl-circuit R=20 ohm,L=0,01mH.and VT=20v,100khz.

Calculate:

1.3.1ZT(answer in polar form)

1.3.2 IT(answer in polar form)

1 .3.3 IL(answer in polar form)

1.3.4 IR(answers in polar form)

Questions 2: power supplies

2.1 A power supply makes use of a bridge rectifier and a simple capacity filters the following values of the circuit are known:

VDc=12v,. Rl=100 ohm,. f=50hz before rectification.

2.1.1 C if the ripples factor is3%

2.1.2 cm across the bridge rectifier

2.2 A 500mw,10 v Ener diode is used in voltage reference source.

If the maximum supply voltage is 16v, calculate the value of the series resistor in order to protect the zener diode.

2.3 draw a neat labelled circuit diagram of a high,stable, adjustable power supply.thr circuit must use of a regulatory components and operational amplifier.

Questions 3: transistor amplifiers

3.1 state three factors which causes a variation on the collector current of a transistor because of a varying temperature.

3.2 the following values of a common emittor amplifier is known:

Rb1=15,97k ohm, Rb2=3k ohm, RE=120 ohm.

RC=480 ohm, VCC=12v, vbe =0,7 and beta=250

Calculate the value of be.Ic,IB.vce and VB of the amplifier (assume the transistor is made from silicone type material).

3.3 calculate the input impedance z; and the output impedance Zo of the circuit in

.question means of the appropriateethode if:

hie=1,2kohm;here=2x10 exp 4;hfe=100 and hoe=20 micro amper /volt (Rs=O)

Questions 4: operational amplifiers

4.1 explain the term drifting as applicable to operational amplifiers

4 .2 draw a neat, labelled circuit diagram of an active high -pass filter with unity gain.

4.3 calculate the _3db frequency of the filter in question .4.2 if both capacitors have value of 0,1 if while both resistor have value of 1 k ohm

4.4 draw a neat, labelled circuit diagram of a practical operational integrator.

Questions 5: integrated circuit.

Indicate whether the following statement are true or false. Choose the answer and write only true or false to the question number (5.1-5.3) in the answers book.

5.1 CMOS-integrated circuits s have high nose immunity.

5.2. CMOS - integrated circuit are susceptible to static charge because of their low reactive input

5.3 when one works on a circuits with CMOS-Integrated circuit on it, the power supply to the circuit must be switchined off.

Questions 6: transducers.

6.1 draw a neat, labelled circuit diagram of a thermistor control circuit that makes use of an operation amplifier and a dc-wheaston bridge.

6.2 if the bridge in question 6.1 is balanced at 25 degree.

RT=10kohm at 25 degree Celsius.

A=0,2169

Beta=3200 and a 10 v battery is connected across the bridge, calculate,

6.2.1 the value of the thermistor at 30 degree Celsius.

6.2.2 the gain of the amplifier with an output of 10v.

Questions 7: electronic phase control

Draw a neat, labelled bloc diagram of a phase control circuit that makes use of two silicon controller rectifier for full- wave AC - control. Also show the trigger and load waveform a phase angle 90 degree.

Questions 8: test equipment

Draw a neat, labelled circuit diagram of an R-c- phase shift oscillator.

Calculate the values of the resistor if the oscillating.frequency.is 50 khz and the capacitor value are 10 NF.

9.3draw an neat , labelled circuit diagram of a Schmidt - trigger.

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Electrotech n5.n6../

Time 3houts

Marks:100

INSTRUCTIONS and informaton

1.answer all the questions .

2.read all the questions carefully.

3.number the answers according to numbering system used in this question.

4.writr neatly and legibly.

Questions 1.

1.1 state two methods of changing the direction of DC machine.

1.2 where are the compensation windings situated and how are they connected?

1.3 the number of series turns per pole required on 355 kWh long shunt compound generator must be determined to enable it to maintain a constant voltage at 580v.betwen no load and full load . without any series winding,it found that the shunt current has to be 6A on no load and 7,5 on full - load, to maintain the voltage constant at 580v.number of turns per pole on the shunt winding is 2100.

1.3.1 calculation the demagnestising and cross-magnetising ampere-tirns per pole

1.3.2 if the series coils where wound with 12 turns per pole and had a total resistance of 0,08 ohm determine the value of diverter resistance that would be required to give level compounding

1.4 A 625v, 35kw, four-pole DC motor has a wave-wound armature with 900 conduct and the commutator has 180 segment.the full-load efficiency is 85% and the shunt current is 2,25A. The brushes are shifted backwards though1,5segment from the geometrical neutral axis.

Questions 2.

2.1 the voltage across a certain circuit element is v(t)=800sin(314t+30degres)v.

The current flowing in this element is I(t)=8sin(314t+30degre)A .

2.1.1 the nature and magnitude of this element.

2.1.2 the time period of the waveform.

2.2 circuit consisting of a coil with an inductance of 140 micro Henry and resistance of 8.25 ohm is connected in parallel with a variable capacitor.this combination is the connected in series with a resistor of 7300ohm across a 380v supply having frequency of 1mhz

Calculate:

2.2.1 the capacitance of the capacitor required to give resonance.

2.2.2 the impedance of the parallel circuit.

2.2.3 the current in each branch of the parallel circuit.

Questions 3.

3.1 name three methods of reducing leakage flux in transformers.

3.2 A 24 KVA,3 200/800 single -phase transformer, operating at no-lo g has the following resistance and leakage reactances.

Primary winding: resistance 8,4ohm reactances 14.4ohm secondary . resistance 0,75 ohm reactances 1,5ogm

Calculate the secondary voltage at full load with a power factor of0,8 lagging, when the primary voltage remaining constant.

3 .3 three similar inductor, with a resistance of 29ohm each and inductances of 0,038h are connected in delta to a three - phase ,535v,50hz sinusoidal supply.

Calculate

3.3.1 the value of the line current.

3.3.2 power factor.

3.3.2 power input to the circuit.

Questions 4.

4.1the input power to a 2950v three- phase delya- connected induction motors is 135kw..the power factor the motor is 0,85 lagging.

Calculate:

4.1.1 the line and phase currents

4.1.2 input power reading on the two watt-meters

4.1.3 KVA rating of the motor

4.2 A three-phase transmission line supplies a 1,73 me stat-connected load, having a power factor of0,85 lagging at a line voltage of 35kv.

The line has a resistance of85 ohm per phase and an inductive reactances of 155 ohm per phase.

Calculate:

4.2.1 voltage (line)at the sending and end

4.2.2 the per unit regulation

4.2.3 efficiency of the line

Questions 5.

5.1 explain the term hunting or phase swing with reference to synchronous motors.

5.2 A three -phase slip-rinh induction motors gives a reading of96v across the slip- rings on open circuit with normal stator voltage applied.the rotor is star connection and has an impedance of0,7+j9 ohm per phase.

Calculate the impedance:

5.2.1 at standstill with the slip-rinh joined to a star connected starter with a phase impedance of 4+j7 ohm

5.2.2 when running normally with 5% slip.

5.3 a three-phase induction motor with a star- connected rotor, has an induced EMF of 145 v between slip- rings a standstill on open circuit.the rotor resistance and reactance per phases at standstill is 1,25ohm and 6,75ohm respectively.

Calculate the following when the slip - rings are short - circuited

5.3.1 the rotor starting current per phase.

5.3.2 the power factor.

5.4 A three-phase stat-connected alternator. driven at 1200 rev/ Min. Is required to generate a line voltage of 885 vat 6.. open circuit.assume full full picthef coils and the stator has 8 slots per pole per phase and 6 conductor per slot (KD=o.96)

Calculate.

5.4.1 the number of poles

5.4.2 the useful flux per pole.

Total 100marks..

Explanation oral presentation. Topic research find

Assessment circular

Defense factor . Fundamental low demonstration low answers regulier attandance verification.

critical assessment eng

Knowledge explain text book reference

Analysis discovery

Planer

Criteria outcome value r

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
ELECTROTECHNICS N6
TIME: 3 HOURS
MARKS: 100

Enq
uiries
: Pierre de
Villiers
Tel: 012
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-
mail:
devilliers.p@dhet.gov.za
TECHNICAL AND VOCATIONAL EDUCA
T
ION AND TRAINING (TVET)
COLLEGE ACADEMIC
CALENDAR FOR 202
2
NATIONAL CERTIFICATE VOCATIONAL (NCV)
ANNUAL
STAFF
COMMENCES
CLASSES
COMMENCE
CLASSES END
EXAM DATE
COLLEGES CLOSE
LECTURING DAYS
LECTURING
STAFF
S
ERVICE
DAYS
Term 1
17
January
24
January
01 April
Supplementary Examination
:
21 February
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1
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March
01 April
49
54
Term 2
11 April
11 April
15 June
15 June
4
4
4
4
Term 3
04 July
04 July
16 September
14 Days for the Internal
Examinations
16 September
53
53
Term 4
2
6
September
2
6
September
2
8
October
Life Skills & Computer Literacy
(
P2
)
:
24
-
2
8
October
Examination:
31
October
–
30
November
0
2

December
2
5
5
0
YEAR TOTALS
:
1
70
20
1
REPORT 191:
BUSINESS AND UTILITY STUDIES
SEMESTER
STAFF
COMMENCES
CLASSES
COMMENCE
CLASSES END
EXAM DATE
COLLEGES CLOSE
LECTURING DAYS
LECTURING
STAFF SERVICE
DAYS
Semester 1 Term 1
1
7
January
2
4
January
01 April
01 April
49
54
Semester 1 Term 2
1
1
April
1
1
April
2
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May
Computer
Related Subjects
:
17
–
23 May
Examination:
2
4
May
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26
4
4
Semester 2 Term 3
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September
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September
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53
Semester 2 Term 4
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September
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September
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November
Computer
Related Subjects
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Examination:
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Nov
ember
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2 December
31
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YEAR TOTALS
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REPORT 191: NATURAL SCIENCE STUDIES
TVET LETTERED
CIRCULAR NM
(Dated 27 July 2021)
STAFF
COMMENCES
CLASSES
COMMENCE
CLASSES END
EXAM DATE
COLLEGES CLOSE
LECTURING DAYS
LECTURING
STAFF SERVICE
DAYS
2021 T3 Candidates
Prep,
Revision and
Examinations
1
7
January
17
January
28 January
31 January
–
18 February
18 February
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28 February

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June
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Trimester
2
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August
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August
11
November
14
November
–
02 December
02 December
6
5
83
YEAR TOTALS
:
14
1
201
NOTES
PUBLIC AND COLLEGE HOLIDAYS
1 JANUARY
NEW YEAR'S DAY
The Calendar was set taking cognisance of the late release of results in Engineering Study.
The
I
nternal
E
xaminations may be conducted either in the second or third term, for a maximum of fourteen days
for NC (V) candidates
.
21 MARCH
HUMAN RIGHTS DAY
15
APRIL
GOOD FRIDAY
18
APRIL
FAMILY DAY
Lecturing staff service days when no students are on campus MUST be utilised for lesson planning, assessment planning, subjec
ts and
faculty meetings, lecturer training, work integrated learning and work
-
based experience, and administrative work.
27 APRIL
F
REEDOM DAY
1 MAY
WORKERS' DAY
The NC (V)
Supplementary
E
xaminations should not impede teaching contact time
2
MAY
PUBLIC HOLIDAY
16 JUNE
YOUTH DAY
1
7
JUNE
COLLEGE HOLIDAY
08 AUGUST
COLLEGE HOLIDAY
9 AUGUST
NATIONAL WOMEN'S DAY
No deviation
from this approved calendar is allowed without prior approval by the Director
-
General of the Department of Higher Education and Training.
24 SEPTEMBER
HERITAGE DAY
16 DECEMBER
DAY OF RECONCILIATION
25 DECEMBER
CHRISTMAS DAY
26
DECEMBER
DAY OF GOODWILL
DR PHIL MJWARA
ACTING
DIRECTOR
-
GENERAL: HIGHER EDUCATION AND TRAINING
DATE:
27 SEPTEMBER 2021

vet Colleges School Calendar 2022

Tvet Colleges School Calendar 2022

In South Africa, there are fifty registered and certified public TVET colleges operating on 364 campuses across the country’s rural and metropolitan areas.
The Continuing Education and Training Act 16 of 2006 authorizes the establishment and operation of public TVET colleges, which are administered by the Department of Higher Education and Training.

The acronym for (Tvet) is Technical Vocational Education and Training. Tvet is a term used in international education to express the growth of individual abilities and businesses. A Tvet college is also the greatest alternative for you if you want to establish your own business or learn new practical skills. Tvet Colleges are frequently focused on educating students to work as functional workers in their skilled trade of choice.

Agriculture, arts and culture, business, hospitality, commerce and management, education, training and development, engineering, manufacturing and technology, services, building construction, and security are among areas where TVET Colleges can provide courses. Tvet Colleges School Calendar 2022

Tvet Colleges application open date:

The Technical and Vocational Education and Training (TVET) Colleges Online Application for 2022 opens on 1 September and closes on 30 November. Therefore, all those who want to apply for TVET College Online should do so before the application deadline.

Read: lecturer vacancies tvet colleges

Tvet colleges application documents needed to apply:

The following documents must be submitted due to applying to the college:

A unique/valid Email address and cellphone number
3 certified copies of ID of Parent/Legal Guardian
3 certified copies of ID of Learner
South African applicants will need an ID number.
Foreign applicants will need their certified copies of passport numbers.
Copy of your school qualifications (eg Senior Certificate)
A certified copy of your latest results/Grade 9 or Higher;
Proof of Residence.
SAQA approved foreign qualifications
Proof of medical insurance or cover
Valid study permit

Tvet Colleges School Calendar 2022

How to Make an Application

Get your application form first.

All new applications are now available online:

I consent to the TVET College using my e-mail address and cellphone number to communicate with me throughout the application process. During the application process, please make sure you include a valid and working e-mail address as well as one telephone number.

Step 2: Fill out the application form completely.

E-mail, ID, and cell phone number verification. Your ID, e-mail, and cell phone are used to verify your identity.

Step 3: Ensure that all supporting documents are attached.

All applicants who are beginning a new qualification must submit the following certified documents:

Birth Certificate/Identity Document (Proof of New ID/Passport Application)
Certificates/Qualifications
Recent Academic Achievements
Other account statements/billing documents for municipalities (not older than 3 months)
a current study permit (Foreign national students)
The Evaluation Certificate of the South African Qualification Authority (SAQA) (foreign qualifications).

Step 4: Fill out and submit your application.

You will receive a confirmation email containing all application details.

TVET Colleges Schools Calendar for 2022

National Certificate Vocational (NCV)
Term 1 (L2)

Term 1 consists of 48 lecturing days.

Classes start 25 January
Classes end 1 April
Supplementary Examinations 10 March – 1 April
College closes 1 April

Term 1 (L3 & L4)

Term 1 consists of 38 lecturing days.

Classes start 8 February
Classes end 1 April
Supplementary Examinations 10 March – 1 April
College closes 1 April

Term 2 (L2, L3 & L4)

Term 2 consists of 44 lecturing days.

Classes start 12 April
Classes end 14 June
College closes 14 June

Term 3 (L2, L3 & L4)

Term 3 consists of 51 lecturing days. There are also 14 days for internal examinations.

Classes start 8 July
Classes end 17 September
College closes 17 September

Term 4 (L2, L3 & L4)

Term 4 consists of 23 lecturing days.

Classes start 27 September
Classes end 27 October
Exam Dates 28 October – 26 November
Life Skills & Computer Literacy (P2) 21 – 27 October

College closes 8 October

Report 191: Business And Utility Studies

Semester 1 Term 1

Semester 1 Term 1 consists of 48 lecturing days.

Classes start 25 January
Classes end 1 April
College closes 1 April

Semester 1 Term 2

Semester 1 Term 2 consists of 28 lecturing days.

Classes start 12 April
Classes end 21 May
Exam Dates 24 May – 14 June
College closes 14 June

Semester 2 Term 3

Semester 2 Term 3 consists of 47 lecturing days.

Classes start 14 July
Classes end 17 September
College closes 17 September

Semester 2 Term 4

Semester 2 Term 4 consists of 30 lecturing days.

Classes start 27 September
Classes end 8 November
Exam Dates 9 November – 30 November
College closes 8 December

Trimester 1 (N1, N5, N6)

Trimester 1 (N1, N5, N6) consists of 47 lecturing days.

Classes start 25 January
Classes end 31 March
Exam Dates 1 April – 23 April
College closes 23 April

Trimester 1 (N2, N3, N4)

Trimester 1 (N2, N3, N4) consists of 37 lecturing days.

Classes start 8 February
Classes end 31 March
Exam Dates 1 April – 23 April
College closes 23 April

Trimester 2

Trimester 2 consists of 45 lecturing days.

Classes start 20 May
Classes end 22 July
Exam Dates 23 July – 13 August
College closes 13 August

Trimester 3

Trimester 3 consists of 47 lecturing days.

Classes start 8 September
Classes end 12 November
Exam Dates 15 November – 3 December
College closes 8 December

Report 191: Natural Science Studies

The Internal Examinations

may be conducted either in the second or third term, for a maximum of fourteen days for NC(V).

to
me

Dear tshingombe

Section 29(a) of the Policy and Criteria for Evaluating Foreign Qualifications within the South African NQF, as amended (March 2017) stipulates the requirements that a foreign awarding institution must meet for its qualifications to be recognised.

SAQA bases the advice below on information currently available to it. SAQA reserves the right to change this advice should new authoritative information come to its attention.

Our online application document stipulates the following in terms of schooling qualifications:

"SAQA accepts only school leaving qualifications issued by the official examining / certification body in the country of origin, and not by the school, where based on external examinations.

No Certificates of Evaluation will be issued for school leaving documents other than those in respect of completed, national school exit qualifications issued by the relevant authorities."

Therefore, only school leaving qualifications correctly awarded by the authorised national examination body in the Democratic Republic of Congo will be recognised and not school leaving documents issued by the school itself.

Please note the purpose of this overseas institutions email is to give people some direction regarding accredited and non-accredited foreign institutions for the purpose of recognition and acceptance by SAQA for foreign qualifications evaluation.

Kind regards

Authentication Services

SAQA

The National Qualifications Framework (NQF) Act 67 of 2008 mandates SAQA to provide a foreign qualifications evaluation and advisory service, which it does in accordance with the Policy and Criteria for Evaluating Foreign Qualifications within the South African NQF, as amended (March 2017). Section 29(a) of the Policy and Criteria stipulates the requirements that a foreign awarding institution must meet for its qualifications to be recognised.

From: tshingombe<tshingombekb@gmail.com>**On Behalf Of** tshingombe
Sent: Friday, 08 July 2022 14:54
To:foreigninstitutions<foreigninstitutions@saqa.co.za>
Subject: Foreign institutions inquiries: #6594

Name:	tshingombe
Country:	South Africa
Purpose:	Check status before applying for evaluation
Email:	tshingombekb@gmail.com
Institution:	Saqainstituts St peace college Africa institute police ..tshingombe
Institution physical address:	CNR chruits strut marketer house ..jhb carton center
Website:	tshingombekb@gmail.com
Comment:	Hello dear submitted for examination award degree diplomat final completed bulletin certificate RSA dr Congo student apply dhet examination was irregularities kgaka for reasoning saqa no meet award final Rd Congo n6n5n6.educare and engineering electrical technical .. education technical . pedagogy technical.. science math info

Foreign Institutions Sun, Jul 10, 12:25 PM

Thank you. SAQA has received your enquiry and will respond to it within two working days, unless further research and/or consultation is required. Your Referenc

Tue, Jul 12, 9:54 AM

TSHINGOMBEKB TSHITADI<tshingombekb@gmail.com>